

2004 INFRASTRUCTURE NEEDS SURVEY REPORT

Maryland Department of Planning

2004 Infrastructure Needs Survey Report

May 2005

Maryland Department of Planning

Based on results from the *FY2004 Statewide Infrastructure Needs Survey*, this report summarizes Maryland's infrastructure needs (as reported by local governments and State agencies) and assesses the fiscal capacity of local governments to meet those needs.

Executive Summary: 2004 Infrastructure Needs Survey Report

Purpose: In 1997, the Maryland General Assembly enacted Smart Growth legislation that, in part, directs the Maryland Department of Planning (MDP) to survey local governments and State agencies to report on their self-identified infrastructure needs and to assess their fiscal capacity to undertake their needs. The first survey was completed by MDP in 1998. This report is based on responses¹ to the third, 2004, Infrastructure Needs Survey.

Goal: Infrastructure is a fundamental component of Smart Growth. The goal of this survey is to support statewide Smart Growth efforts by: assessing statewide infrastructure needs; monitoring infrastructure needs in light of Smart Growth goals; and identifying funding gaps to ensure the State is equipped to handle projected development in planned locations within the priority funding areas while preserving a high quality of life for all communities in Maryland.

For future surveys to most effectively meet this goal, improvements must be made to the quality of the reported data. Currently, survey results serve as an indicator of need and demonstrate apparent gaps in funding. For a sound analysis, the data must be more precise and comprehensive. With more accurate information, the needs of local governments can be addressed at a regional level to achieve successful, Smart Growth. Secondly, accurate information will strengthen efforts to find solutions for the increasing gap between jurisdictions financial resources and their reported infrastructure needs.

Infrastructure Planning. The self-assessment section of the survey asked governments to answer questions on infrastructure planning in their respective jurisdictions. Results indicate that governments are unable to adequately maintain existing infrastructure and limited in their ability to support planned growth.

- ?? 114 (65%) reported that they **were unable** to provide adequate infrastructure for existing residents and businesses.
- ?? Nearly one-half of those who reported a substantial shortfall in funds needed to maintain existing infrastructure or accommodate new development reported that they deferred maintenance/repairs with a resulting decline in service quality.
- ?? About 10% of those with funding shortfalls reported that they did not provide adequate infrastructure to fully accommodate new development in appropriate areas.
- ?? About another 10% of those with funding shortfalls reported that they were forced to impose a building moratorium related to an Adequate Public Facilities Ordinance (APFO).

There is an immediate need to address the shortcomings of infrastructure planning statewide. In the absence of addressing this need, the State's Smart Growth efforts are jeopardized by inadequate infrastructure and a lack of local control in directing growth to the appropriate locations within priority funding areas. The ability of local governments to provide the MDP with accurate infrastructure needs assessment is related to the quality of their capital improvements programming process. For such data to be meaningful to the survey, there must be a common understanding of "need" through similar inventorying methods, standard system preservation programs and the application of accepted life-cycle costing techniques.

¹ Responses are made at the sole discretion of the survey respondent. Individual jurisdictions' or agency's needs are NOT determined by the MDP.

Need: Local governments and State Agencies reported their identified infrastructure needs ².

?? Local Governments reported needs totaling **\$39.5 billion**
(short-term needs totaled \$21.3 billion)

?? State Agencies reported needs totaling **\$50.1 billion**
(short-term needs totaled \$24.5 billion)

Needs were divided into short-term budgeted (*needed, or intended for construction, in the next 5 or 6 years, and are in a Capital Improvement Program or otherwise budgeted*), short-term unbudgeted (*short-term projects not included in an adopted CIP nor otherwise budgeted*), and long range (*needed, and intended for construction, in the 15 years following the initial 5 or 6 year short term projects*).

Needs were also divided into the reason for the project: rehab/renovation (*projects needed to maintain, repair or replace existing infrastructure*), existing unmet need (*backlog of new capacity or additional capacity needed to meet the demands of existing residents and businesses*), growth (*new infrastructure or new capacity needed to meet the demands of new residents and businesses*), and/or other (*projects necessary for other reasons such as public safety, neighborhood request, etc*). Projects could be allocated a percentage for each reason, for example one project could allocate 10% of a project for rehab needs, 40% existing unmet need and 50% growth.

Infrastructure Type. The infrastructure types consisting of the greatest number of projects and the highest reported costs for local governments ranked in descending order by total costs are: Schools, Roads and Bridges, Sanitary Sewer, Water Supply, Parks and Recreation, and Government Buildings (including Libraries). For State agencies, the infrastructure types with the highest costs are: Roads and Bridges, Public Transportation, Schools, Detention Facilities, Government Buildings, and Airports.

The adequate provision of these infrastructure types directly relates to the success of Maryland's Smart Growth and Neighborhood Conservation initiatives. Smart Neighborhoods and Infill Redevelopment efforts require an efficient use of infrastructure with convenient gathering places and recreation spaces, libraries, schools, well-connected and pedestrian oriented streets, and additional infrastructure capacity to support planned growth.

Fiscal Capacity. In recent years, county governments spent an annual average amount of \$2 billion (\$360 per capita) for capital projects (FY 1997 -1999). Survey results show that statewide over the next six years, local governments have an average annual need nearly **two times** recent annual capital spending by counties. Maryland's total capital budget for FY2004 was \$2.3 billion (\$414 per capita), indicating that State agencies have an average annual need of about 1.7 times recent annual capital spending.

With an average annual need nearly two times recent annual capital spending by counties, there is an evident demand for additional resources to facilitate the provision of adequate infrastructure. By not addressing this gap, deferred needs may be accumulating into an even larger gap between local governments' fiscal constraints and infrastructure that they need. Maryland is a rapidly growing state, growing faster, in fact, than the national average between the 1990 and 2000 census. Maryland is projected to grow by close to half a million people during the next ten years, which, if needs are not met, will further accelerate the demand for increased infrastructure funding.

² MDP did not define "need" but asked for jurisdictions to report all capital infrastructure projects and system preservation programs.

Adequate and well -maintained infrastructure is inextricably linked to the success of Smart Growth. Not addressing issues directly relating to infrastructure could completely undermine the substantial, nationally recognized, Smart Growth investments made to date. Communities must have adequate infrastructure in order to capitalize on past investments, and to direct growth where it is desired. Without adequate infrastructure Maryland will delay and/or prohibit development in designated Priority Funding Areas adding to the development pressure in rural areas. This will affect Marylander's overall quality of life and the state's economic competitiveness .

SUMMARY OF FINDINGS

Local Governments (Counties and Municipalities)

2 9,035 All Reported Projects	costing \$39.5 billion (\$7107 per capita ³)
2 5,185 Short -term Budgeted Projects	costing \$21.3 billion (\$3832 per capita)
2 1,878 Short -term Unbudgeted Projects	costing \$7.7 billion (\$1,394 per capita)
2 1,970 Long Range Projects	costing \$10.4 billion (\$1,871 per capita)
Reason⁴ for Project	
2 3,104 Rehab/Renovation	costing \$11.2 billion (\$2,015 per capita)
2 2,138 Existing Unmet Demand	costing \$ 9.1 billion (\$1,637 per capita)
2 1,803 Growth	costing \$ 8.8 billion (\$1,583 per capita)

Counties (including Baltimore City)

2 6,151 All Reported Projects	costing \$32.8 billion (\$5,901 per capita)
2 4,054 Short -term Budgeted Projects	costing \$19.4 billion (\$3,490 per capita)
2 845 Short -term Unbudgeted Projects	costing \$ 4.6 billion (\$ 828 per capita)
2 1,247 Long Range Projects	costing \$ 8.7 billion (\$1,565 per capita)
Reason for Projects	
2 1,974 Rehab/Renovation	costing \$ 9.1 billion (\$1,637 per capita)
2 1,439 Existing Unmet Demand	costing \$ 6.7 billion (\$1,205 per capita)
2 1,217 Growth	costing \$ 7.7 billion (\$1,385 per capita)

Municipalities

2 2,882 All Reported Projects	costing \$6.7 billion (\$1, 205 per capita)
2 1,128 Short -term Budgeted Projects	costing \$1.9 billion (\$342 per capita)
2 1,031 Short -term Unbudgeted Projects	costing \$3.1 billion (\$ 558 per capita)
2 723 Long Range Projects	costing \$1.7 billion (\$306 per capita)
Reason for Projects	
2 1,130 Rehab/Renovation	costing \$ 2.1 billion (\$377 per capita)
2 699 Existing Unmet Demand	costing \$2.5 billion (\$450 per capita)
2 587 Growth	costing \$ 1.1 billion (\$198 per capita)

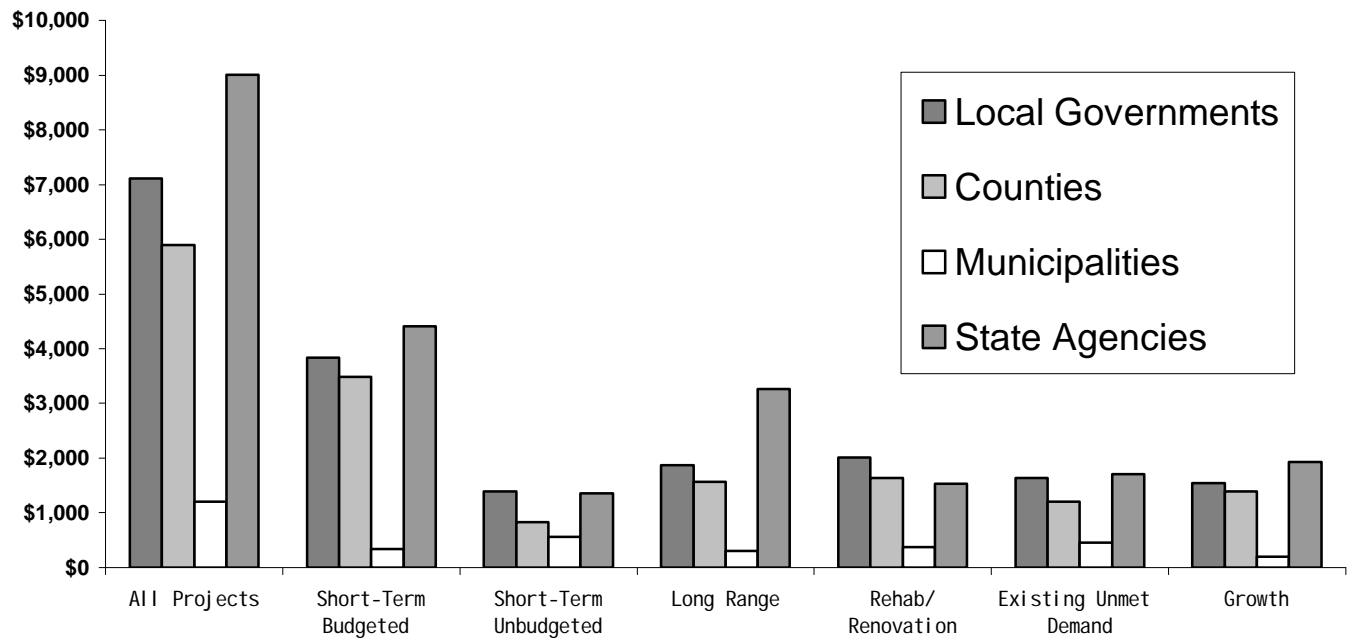
State Agencies

2 2,099 All Reported Projects	costing \$50.1 billion (\$9,014 per capita)
2 1,254 Short -term Budgeted Projects	costing \$24.5 billion (\$4,408 per capita)
2 519 Short -term Unbudgeted Projects	costing \$ 7.5 billion (\$ 1,349 per capita)
2 326 Long Range Projects	costing \$ 18.1 billion (\$ 3,257 per capita)
Reason for Projects	
2 842 Rehab/Renovation	costing \$ 8.5 billion (\$1,529 per capita)
2 358 Existing Unmet Demand ...	costing \$ 9.5 billion (\$ 1,709 per capita)
2 204 Growth	costing \$ 10.6 billion (\$ 1,925 per capita)

³ Based on Population for the State of Maryland in 2004 of 5,558,058

⁴ Reason information was not provided for all projects.

Chart 1. Summary Findings



RECOMMENDATIONS

The infrastructure survey is a powerful tool to guide Smart Growth efforts across the state. It is a collection of the infrastructure needs of all jurisdictions and State agencies. Maryland is one of the few states with this collection of data. The Maryland Department of Planning, seeks to improve the accuracy of the reported data to provide an even more meaningful analysis. Some mechanisms are already in place which could assist this effort if enforced and enhanced, including increased rigor in completion of required infrastructure plans for certain infrastructure types and standardization of the capital improvements program. MDP does not dispute the evident need for infrastructure funding but rather aspires to determine a more accurate assessment of the need and the funding gap to most effectively address this impediment to Smart Growth at a regional level.

Since 1984, the Maryland Department of Planning has published several documents addressing inadequate infrastructure across the state. The situation appears to be growing worse. The consequences to Maryland for not addressing the provision of adequate infrastructure would be severe. Maryland can expect infrastructure failures, which put citizens' health and the environment at great risk, as well as a seriously compromised general quality of life level even if there are no dramatic failures. Infrastructure is the backbone of Smart Growth and if infrastructure facilities are not equipped to support development, then Maryland will not be able to take advantage of the far-sighted policies enacted under the Smart Growth Act. Adequate infrastructure provision is a serious issue that must be addressed today. Recommendations based on the findings from this 2004 Update are:

- ?? Improve infrastructure planning
- ?? Re-examine existing infrastructure funding techniques and identify new funding sources
- ?? Increase effectiveness of the Infrastructure Needs Survey tool

Improve Infrastructure Planning for Accurate Needs Assessment

Maryland is fortunate to have planning mechanisms in place that could assist an accurate assessment of infrastructure needs. Every county and municipality is required to prepare and update a comprehensive plan every six years. Comprehensive plans address the provision of infrastructure facilities. In addition, State law requires every county and Baltimore city to prepare and update several functional plans which address specific infrastructure needs: water and sewer; solid waste; land preservation and recreation; and public school construction. To improve accuracy in the data provided to the survey, the following actions are recommended:

- ?? Standardize content requirements for Capital Improvements Program (CIP);
- ?? Require CIP to be completed by all local jurisdictions;
- ?? Provide technical assistance to local governments on Capital Improvements Programming and Budgeting;
- ?? Review all comprehensive and functional planning programs to identify ways in which they can be improved to support more accurate needs assessment;
- ?? Research innovative infrastructure planning techniques, including infrastructure financing methods, and share best practices with local governments to encourage strong connection between physical and fiscal planning.

Funding

A precise funding figure to cover the gap between what local governments are able to pay and what infrastructure is needed is unknown at this point. However, local governments clearly need some assistance to meet their identified infrastructure needs. Many of these needs are well documented and immediate. While an effort is being made to improve precision in stating an exact dollar amount needed, and similar actions are taken to decrease the funding needed through more rigorous planning techniques, the following actions are strongly recommended:

- ?? Identify additional infrastructure funding sources for local governments;
- ?? Make existing infrastructure funding more flexible and accessible;
- ?? Identify innovative infrastructure financing techniques;
- ?? Provide technical assistance to local governments on setting effective rate structures and infrastructure financing methods.

Improving Infrastructure Needs Survey Tool

In addition to addressing the accuracy of data provided to the survey, the following items address changes in the survey tool to facilitate the data collection process and to also improve accuracy and confidence in the survey analysis:

- ?? Precisely define terms used in the infrastructure survey. Currently, different responses from jurisdictions, which are due to vaguely defined terms, may affect consistency of results;
- ?? Limit survey to local governments and compare findings to State agencies' capital budget;
- ?? Require CIP to accompany survey;
- ?? Require funding information for all short-term budget projects;
- ?? Update survey once every three years.

By implementing each of these recommendations, Maryland can restore the foundation on which Smart Growth rests to a position where local governments will be equipped to direct new development, infill and redevelopment to planned areas and maintain a high quality of life for all Marylanders. Improved infrastructure planning and maintenance programs can greatly reduce overall infrastructure costs as well as allow for timely budgeting procedures so that financial resources are available when needed. Lower infrastructure costs and well-documented, reliable infrastructure needs identification will result in less wasteful spending and better anticipation of future needs. These needs should be addressed partly through the creation of new sources of funding, such as a dedicated State Infrastructure Fund, as well as by more effectively utilizing existing financing methods.

CHAPTER 1: 2004 INFRASTRUCTURE SURVEY BACKGROUND

In 1997, the Maryland General Assembly enacted the Smart Growth and Neighborhood Conservation Act. The Act is a blue print for managing growth in existing communities and undeveloped areas. It directs State resources to revitalize older developed areas, preserve Maryland's valuable resource and open space lands, and to discourage sprawl development. The Priority Funding Areas (PFA) make up one of the most important components of Smart Growth: locally certified areas where growth is planned, and infrastructure exists. The Act includes a mandate for the Maryland Department of Planning to survey local governments and state agencies to report their infrastructure needs⁵ and assess their financial capacity to undertake their reported needs. This is the third survey conducted by the Department of Planning since enactment of the Smart Growth Act. The second survey was completed in 2001 and archived results can be read online at <http://www.mdp.state.md.us/infrastructure/index.html>.

The 2001 infrastructure survey revealed that budget needs were about four times the average annual level of capital spending by counties. The results of the current survey indicate that this figure has decreased to just under **two times** the average level of spending. The total needs reported by counties and municipalities have remained close to the level of \$40 billion that was reported in the 2001 survey. In addition, the annual short-term budgeted need decreased from \$4 billion reported in 2001 to \$3.6 billion in 2004. The partial closing of the gap between needs and actual spending is more a function of differences in the methodology used in compiling data between the two surveys than any major changes in the ability or willingness of local government officials to devote sufficient funds to increase infrastructure quality and capacity. Responses received in the first section of the survey ("Self-Assessment") reinforce this point. The nature of the differences in methodology are discussed in detail in Appendix A. Regardless, a financing gap that was estimated to be nearly as large as the total amount of funds currently being spent on infrastructure projects in Maryland's counties poses a serious threat to the ability of the state to maintain a quality of life Marylanders have come to expect.

Maryland's statewide infrastructure survey is a direct reflection of the state's commitment to Smart Growth. A large part of implementing Smart Growth is making prudent choices concerning Maryland's resources. In order to manage its resources, the General Assembly needs sound information from which to make decisions and allocate funding. Likewise, local governments need to have rigorous capital improvements programs in place to know what infrastructure they have, what infrastructure they will need, and what it will cost to maintain and build that infrastructure. Having consistent, precise information reported via the survey will allow MDP to complete an even more accurate analysis of statewide infrastructure needs. But, it does no good to simply know what the needs are if infrastructure funding levels are not increased. Infrastructure is the backbone of Smart Growth, and, if infrastructure facilities are upgraded to support the expected increase in population, Maryland will not be able to take advantage of the far-sighted policies enacted under the Smart Growth Act. Adequate infrastructure provision is a serious issue that must be addressed today.

PURPOSE OF INFRASTRUCTURE SURVEY

The purpose of the survey is to gather information on infrastructure needs across the state and to report on the financial capacity of local governments to undertake fulfilling them. The infrastructure survey is a method to assess what capital projects local governments and state agencies are planning in the short and long term. The survey asks what is being planned, funding sources for projects, and the reason and origin of each project. Analysis of the survey leads to an indication of whether or not municipalities, counties and state agencies have the fiscal means to fund

⁵ Reader must use discretion while interpreting results as they are based solely on the self reported needs of local governments and State agencies.

their identified infrastructure needs. Citizens, legislators and all level of governments can therefore be more informed on the types of projects and the amount of funding required to maintain this very important component of Smart Growth.

The Survey is also an attempt to examine the need for infrastructure at a regional level. Inadequate infrastructure in one jurisdiction will affect development patterns in other areas. For example, if one jurisdiction has a moratorium on development within its central business district to address inadequate road capacity, development that would be more appropriate within the CBD will instead occur elsewhere, perhaps in outlying areas. Smart Growth therefore requires the examination of infrastructure needs across the entire state in order to direct development to planned growth areas without jeopardizing the quality of life for all Marylanders. Statewide infrastructure planning can save resources, prevent a degradation in the quality of life as existing facilities are overwhelmed by the demands placed on them, and support Smart Growth.

GOAL OF INFRASTRUCTURE SURVEY

Without adequate infrastructure, Maryland will find it difficult to accommodate growth within PFAs. Properly located, adequate and well-maintained infrastructure in designated growth areas is essential to the success of Maryland's "Smart Growth and Neighborhood Conservation" initiatives. One goal of the survey therefore is to focus attention on the status of infrastructure and the important role it plays in the progress and success of Smart Growth and in the health of Maryland's communities. Another goal of the survey is to highlight the financial investment needed to preserve and provide infrastructure for communities to compete in the regional and global economy in order to keep Maryland a strong and desirable place to live, work and play.

NEEDS

The Maryland Department of Planning (MDP) asked for all capital infrastructure project and system preservation program "needs" to be reported in the survey. MDP asked jurisdictions to report all short term and long range capital infrastructure projects and system preservation programs. Capital infrastructure projects are defined as public facilities or amenities that have a useful life of at least 10 years or involve major renovation of existing facilities. System preservation programs provide for major improvements to, or rehabilitation of, existing infrastructure. MDP also encouraged counties and municipalities to coordinate survey responses with each other so that their reported needs were comprehensive and reflected the cumulative professional judgment and knowledge of all local officials, while preventing duplication of the needs identified.

MDP strives to improve accuracy of the data collected in order to improve the quality of infrastructure facilities across the state and to foster Smart Growth from a regional perspective. Currently, needs are reported by a representative of the jurisdictions and the state agencies asked to respond to this survey. Respondents report their needs based on an "honor" system, as no other documentation is required to demonstrate the need or quantify the project cost. The reader should therefore view the figures in this report pertaining to the magnitude of the existing problem and the adequacy of efforts to overcome it as general indicators incorporating some degree of subjective judgment rather than precise estimates of an objective reality.

Various causes may result in same need

The survey assesses the general reason for an infrastructure need using three categories: growth, rehabilitation/renovation, and unmet existing demand. Survey respondents are requested to determine the motivation for initiating each project based on this three-fold scheme. In this regard, the survey may be assuming a level of sophistication that all jurisdictions may not have. Because many capital investments are capable of simultaneously satisfying more than one category of need, the survey allows for a percentage of any project to be allocated to growth, rehab/renovation, and existing unmet need.

Ways “needs” arise

Understanding the complexity involved in determining a community’s infrastructure need s requires identifying the variety of reasons behind how and why “needs” arise. Community infrastructure needs are determined by the following factors: the initial quality of facilities constructed, the quality of maintenance provided for existing facilities, the expected population and employment growth as well as its probable location, technology changes, community standards of acceptable service levels, and Federal and State regulations. The term “need” also lends itself to subjective interpretations as there is no universal agreement as to how much infrastructure the public sector should provide. One community’s need may be another community’s luxury.

CHAPTER 2: SELF ASSESSMENT RESULTS

Section One of the survey contained 23 general questions to assess infrastructure planning in each jurisdiction. Questions asked in the 2001 survey were included in the 2004 survey, with the answers from the 2001 self-assessment appearing to the side of the question in italics as a reminder of what was previously reported. Six of the self-assessment questions asked in 2004 concerned local governments' ability to provide and maintain adequate infrastructure for existing residents. The answers to those questions are as follows:

Have you been able to provide adequate infrastructure for existing residents and businesses?

- ?? In 1998, 155 (85%) local governments reported that they **were able** to provide adequate infrastructure.
- ?? In 2001, 80 (44%) local governments reported that they **were able** to provide adequate infrastructure *(almost half the number from 1998)*
- ?? In 2004, only 62 (35%) local governments reported that they were able to adequately maintain infrastructure, continuing the pattern of steady decline in the ability of local governments to satisfy the needs of their existing residents.

The inability to provide adequate infrastructure is evidenced across the state by inadequate recreational facilities, closing of public libraries and sanitary sewer overflows. The finding that **local governments have not been able to adequately maintain their existing infrastructure** was confirmed by comparing data provided by local officials pertaining to their perceived infrastructure needs in the two surveys with the actual spending levels of their jurisdictions. Needs identified as Short-term Budgeted were, on an annual basis, nearly two times more than the total capital spending of the counties.

Is your ability to fund infrastructure a limiting factor in your ability to direct new growth to appropriate areas?

The success of Smart Growth policies depends, in part, on being able to direct growth to appropriate areas.

- ?? In 1998, 100 (64%) local governments reported that their ability to fund infrastructure was a limiting factor in directing new growth to appropriate areas.
- ?? In 2001, 120 (66%) local governments reported that their ability to fund infrastructure is a limiting factor in directing new growth to appropriate areas.
- ?? In 2004, only 28 local jurisdictions reported that they were unable to provide adequate infrastructure to fully accommodate new development in appropriate areas. The numbers for 2001 and 2004 are not comparable, however, because far fewer potential respondents elected to respond to this question in 2004 than in 2001.

The survey finding that local jurisdictions are **limited in their ability to direct growth** to appropriate areas is reflected by recent data showing an increase in development outside of the Priority Funding Areas (PFAs). Development outside PFAs raises the possibility that inadequate infrastructure may be one of many factors prohibiting growth from occurring inside areas with some pre-existing infrastructure that have been planned for growth. Slightly more than one-half of the 28 local jurisdictions experiencing this problem indicated that sanitary sewer, roads and bridges, and water supply were most likely to be involved. Parks and recreation were the next most likely to be deficient. Schools and fire facilities were least likely to be the limiting infrastructure types.

The 2004 survey attempted to determine the extent to which Adequate Public Facilities Ordinances (APFO) may have contributed to this problem. APFOs are designed to curb development where it would threaten the maintenance of existing infrastructure service levels. Unfortunately, an insufficient number of responses was received to this question to draw any conclusions.

The location of development with regard to PFAs may also raise issues of equity, as the financial burden of installing and maintaining local infrastructure improvements may be unequally borne by residents who are left behind in older communities (which are more likely to be located within PFAs). Studies of the equity impacts of providing infrastructure for rapidly growing areas have often concluded that the burdens are imposed in a disproportionate manner on existing residents. For example, a 1998 study for the Natural Resources Defense Council of wastewater collection systems in the Chicago and Cleveland areas found that in wastewater systems that serve areas with varying densities but charge uniform rates for services, residents and businesses in more compact neighborhoods are likely to be subsidizing those in more sprawling ones.⁶ The more compact neighborhoods in the state are most likely to be older ones inside PFAs with relatively large populations of low-income families and retirees, neither of whom can afford to pay more for improved or new infrastructure systems needed to service growth areas.

Although a very high percentage of counties — more than 90% -- reported in 2004 that they have Capital Improvement Programs, there are many municipalities who still do not (47%). Also, many jurisdictions reported that they do **not** have system preservation programs that receive an annual level of funding (64%). Additionally, only 30% of jurisdictions use any predictive tools for estimating the timing and/or cost of rehabilitation projects, and 38% of jurisdictions did not have inventories of existing infrastructure and/or a facilities master plan. This lack of information only adds to the long-term cost of adequately maintaining infrastructure as seemingly minor problems are allowed to fester until a major disaster strikes (e.g., sewer main break) that may require costly repairs. Had the problem been addressed on a timely basis, repair costs could probably have been substantially reduced.

The 2004 survey asked some questions that had never been asked in previous surveys in order to determine the impacts on investment in infrastructure of the budgetary constraints experienced by several local jurisdictions in the state as a result of the recent national recession. Forty-four local jurisdictions or 54% of the 81 respondents who updated this part of the survey indicated they had experienced a substantial shortfall in funds needed to either maintain existing infrastructure or accommodate new development adequately since the last survey. When queried about how they handled the situation, 20 local jurisdictions (45% of those who acknowledged a serious budget problem) indicated that they deferred maintenance/repairs with a resulting decline in service quality. About 20% of the affected local jurisdictions indicated that they either did not provide adequate infrastructure to fully accommodate new development in appropriate areas or that they imposed a building moratorium related to an Adequate Public Facilities Ordinance (APFO) in roughly equal numbers. About one-half of the jurisdictions indicating that they were unable to maintain existing basic infrastructure at the desired service level noted that roads and bridges and storm water drainage were the most adversely affected infrastructure types. In descending order, the next most impacted infrastructure types were sanitary sewer, water supply, and parks and recreation. Fire facilities and schools were the least likely to be affected.

⁶ Natural Resources Defense Council, “Another Cost of Sprawl: The Effects of Land Use on Wastewater Utility Costs,” Washington, DC, 1998.

Local jurisdictions that had experienced substantial revenue shortfalls were asked to indicate the major factor responsible for this condition. About 40% (or 15) of the 37 local governments who responded (not all of those acknowledging serious budget problems chose to answer this follow-up question) indicated that a decline in grants from the state or the federal government was the major factor. The second most frequently cited factor was adverse national or regional economic trends. The only other factors receiving more than one response were adverse local economic conditions (e.g., loss of major employer, natural disaster) and an unanticipated diversion of general revenue needed to cover higher operating costs associated with unexpectedly heavy demands by existing residents.

Most local jurisdictions threatened with substantial revenue shortfalls chose to impose new fees or excise taxes, increase existing ones, or rely more heavily on debt finance to finance needed capital projects rather than adopt measures aimed at limiting development. Of the 31 local jurisdictions resorting to revenue raising measures, 22 relied on new or increased fees/excise taxes and 9 elected to increase bond issuance.

It is evident that local jurisdictions continually struggle to meet the growing demands for well-maintained and adequate infrastructure. Theoretically, having a Capital Improvements Program would mean that a jurisdiction is budgeting for needed capital projects and therefore completing projects according to an agreed upon schedule. However, the large gap between needs and expenditures indicates a large disconnect between having a CIP and being able to provide and maintain infrastructure facilities. It could be that local governments are constrained by the funding level of their budget, they may not be budgeting appropriately for the maintenance of their infrastructure, or they may be building new infrastructure at the expense of what already exists. Whatever the reason, the data indicates that jurisdictions will have trouble capitalizing on infrastructure investments if they are unable to properly maintain their assets. This could have implications for directing growth to appropriate areas and for maintaining the quality of life in communities. In the long run, it could also mean higher user fees or taxes for existing residents or the necessity for State and Federal grants as local governments try to replace and/or repair failing infrastructure.

CHAPTER 3: INFRASTRUCTURE NEEDS RESULTS

The survey asked for information on capital expenditures for the following infrastructure types:

<input checked="" type="checkbox"/> Airports	<input checked="" type="checkbox"/> Open Space	<input checked="" type="checkbox"/> Shore Erosion Control,
<input checked="" type="checkbox"/> Cultural Facilities	<input checked="" type="checkbox"/> Parking	<input checked="" type="checkbox"/> Sidewalks,
<input checked="" type="checkbox"/> Dams	<input checked="" type="checkbox"/> Parks And Recreation	<input checked="" type="checkbox"/> Solid Waste Disposal,
<input checked="" type="checkbox"/> Economic Development	<input checked="" type="checkbox"/> Police Facilities	<input checked="" type="checkbox"/> Stormwater And Drainage,
<input checked="" type="checkbox"/> Environmental Mitigation	<input checked="" type="checkbox"/> Ports	<input checked="" type="checkbox"/> Street Lights And Street Scaping,
<input checked="" type="checkbox"/> Fire Facilities	<input checked="" type="checkbox"/> Public Libraries	<input checked="" type="checkbox"/> Telecommunications,
<input checked="" type="checkbox"/> Government Buildings	<input checked="" type="checkbox"/> Public Transportation	<input checked="" type="checkbox"/> Water Supply
<input checked="" type="checkbox"/> Health And Human Services	<input checked="" type="checkbox"/> Rail	
<input checked="" type="checkbox"/> Housing	<input checked="" type="checkbox"/> Roads And Bridges	
<input checked="" type="checkbox"/> Judicial Courts	<input checked="" type="checkbox"/> Sanitary Sewerage	

Local and state governments typically share the cost of capital projects, and the federal government may provide partial funding in the form of grants and/or loans, depending on the infrastructure type. Likewise, municipal and county governments may also share the capital costs of those projects from which both jurisdictions receive a benefit. To prevent double counting of the need, MDP asked that jurisdictions only report those infrastructure needs that are located in their jurisdiction and to which they are contributing any level of funding. Projects that are implemented and funded by a State agency without financial contributions from local governments were to be claimed by State agencies.

The last survey performed in 2001 provided a separate analysis of the results for counties and municipalities in addition to an overview of the combined results for all local governments. This report also presents an overview of the combined results but eliminates a substantial amount of the disaggregated results that was presented in the 2001 survey report. The department believes that this more general approach is warranted on the grounds of both statistical reliability and conciseness. The overall response rate to the 2001 survey was significantly higher than for the current survey as well as more even between the counties and municipalities (See Appendix A: Methodology Issues). Both groups of local jurisdictions had response rates exceeding 75% in 2001. The overall response rate, as measured by the proportion of total projects listed in the 2001 survey that was updated in 2004, was 60%. The response rate for counties differed substantially from that for the municipalities, however. Slightly less than one-half of all projects undertaken by the municipalities were updated, whereas two-thirds of the county projects were updated. Within the municipality category, the results were distorted by a differential rate of response between the smaller and larger jurisdictions. The smaller jurisdictions were arbitrarily defined as those with less than 40 projects listed in the 2001 survey. These jurisdictions updated only about one-third of these projects. The larger municipalities were considerably more likely to respond to the survey, as measured by a response rate of 63%. The overall results would therefore be disproportionately influenced by the larger jurisdictions.

The combined results for counties and municipalities should not be distorted by this differential response rate, as short-term budgeted infrastructure needs reported by counties were about ten times greater than those reported by municipalities. In addition, the fact that there is a considerable amount of overlap between the types of infrastructure projects undertaken by the counties and the municipalities minimizes the loss of information resulting from examining only the combined results. A review of Appendix G, which lists total spending of counties and municipalities for all short-term budgeted projects by infrastructure type, shows the extent of this overlap. Although there are significant differences between the two types of local governments in spending priorities for the less significant infrastructure types, there is considerable overlap in the highest priority categories. For example, roads and bridges and sanitary sewer were among the top three priority items (as measured by total spending amounts) for

both types of local governments. Water supply also ranked fourth highest for both categories. A key difference, however, is spending on schools, which ranked second for the counties but well down the list for the municipalities. The other differences worth mentioning are that municipalities are more inclined to spend money on airport and public transportation projects than the counties.

The report will compare counties with municipalities on dimensions where there are significant differences, however, such as funding sources. The reader should keep in mind, however, that the municipality results are biased in favor of the larger jurisdictions.

A. LOCAL GOVERNMENT

In this report the term local government refers to the combined results of all municipalities and counties. The results in the following sections will be presented by number of projects, project costs, budget schedule, and reason for the project.

SUMMARY OF FINDINGS:

9 9,035 Reported Projects	costing \$39.5 billion (\$7,107 per capita ⁷)
5 5,185 Short-term Budgeted Projects ...	costing \$21.3 billion (\$3,832 per capita)
1 1,878 Short-term Unbudgeted Projects	costing \$ 7.7 billion (\$1,394 per capita)
1 1,970 Long Range Projects	costing \$10.4 billion (\$1,871 per capita)
Reason for Project	
3 3,104 Rehab /Renovation	costing \$11.2 billion (\$2,015 per capita)
2 2,138 Existing Unmet Demand...	costing \$ 9.1 billion (\$1,637 per capita)
1 1,803 Growth	costing \$ 8.8 billion (\$1,583 per capita)

PROJECTS AND COSTS

Local governments reported 9,035 infrastructure projects totaling \$39.5 billion (\$7,107 per capita).

INFRASTRUCTURE TYPES

As noted in the previous sections, the infrastructure types consisting of the most number of projects and those with the highest reported costs alphabetically are;

- ?? Government Buildings, including Libraries
- ?? Parks and Recreation
- ?? Roads and Bridges
- ?? Sanitary Sewer
- ?? Schools
- ?? Water Supply

⁷ Based on Population for the State of Maryland in 2004 of 5,558,058

TABLE 3. Local Government Need (\$000 omitted)

INFRASTRUCTURE TYPE	NUMBER OF PROJECTS	% OF ALL PROJECTS	TOTAL COST	% OF ALL PROJECT COSTS	COST PER CAPITA
Roads and Bridges	1,984	22%	\$8,668,697	22%	\$1,560
Schools	1,119	12%	\$ 9,288,962	24%	\$ 1,671
Sanitary Sewer	839	9%	\$ 5,998,444	15%	\$1,079
Gov't. Bdgs., inc. Lib.	705	8%	\$ 1,243,989	3%	\$224
Water Supply	829	9%	\$3,516,769	9%	\$633
Parks and Recreation	1,158	13%	\$1,745,752	4%	\$314
<i>Total</i>	6,634	73%	\$30,462,613	77%	\$5,481
All Other Types	2,401	27%	\$9,042,667	23%	\$1627
TOTAL	9035		\$39,505,280		\$7228

These infrastructure types are the fundamental building blocks of most communities. Without these infrastructure types functioning properly and without additional capacity for growth, communities will be hard pressed to meet the most basic needs of residents and businesses. These six infrastructure types are closely linked to one another because the failing conditions of one could lead to failures and/or decrease capacity of the other types of infrastructure. For example, impaired water bodies pose public health risks and will therefore affect the public's enjoyment of recreation space that contains contaminated waterways. Additionally, building schools in the hinterlands away from existing residential development may require new roads and bridges. Alternatively, congested roads and lack of public transportation in developed areas may induce households to move to less congested areas where households with children will create a demand for new schools. Failing conditions also diminish perceived residential property value and result in public and private sector disinvestments. It is necessary therefore, to have holistic infrastructure programs that take into account the many ways in which infrastructure types are interconnected.

BUDGET SCHEDULE

Counties and municipalities were asked to report on the budget schedule for each project:

- ?? Short Term Budgeted (**STB**) projects are those that are needed, or intended for construction, in the next 5 or 6 years, and are in a Capital Improvement Program or otherwise budgeted;
- ?? Short Term Unbudgeted (**STU**) projects are those that are needed, and intended for construction, in the next 5 or 6 years. STU projects are not included in an adopted CIP nor otherwise budgeted;
- ?? Long Range (**LR**) projects are those that are needed, and intended for construction, in the 15 years following the initial 5 or 6 -year short -term projects. LR projects include infrastructure necessary to implement the adopted Comprehensive Plan.

Detailed location and cost information is frequently not available for LR projects, and this was reflected in the level of detail reported for those projects in the survey. The budget schedule for which counties and municipalities reported the most infrastructure projects was **Short Term Budgeted** . This was expected, as jurisdictions should have comprehensive information on projects included in their CIP.

TABLE 4. Local Government Budget Type

BUDGET TYPE	# OF PROJECTS	% OF TOTAL PROJECTS	COST	% OF TOTAL PROJECT COST	PER CAPITA COST	%PROJECTS WITH NO COST INFO.
STB	5,185	57%	\$21,331,230,000	54%	\$3,832	6%
STU	1,878	21%	\$7,748,926,000	20%	\$1,394	10%
LR	1,970	22%	\$10,425,124,000	26%	\$1,871	14%
Total	9,033	100%	\$39,505,280,000	100%	\$7,107	9%

The high number of projects without cost estimates (9%) indicates that the reported costs are significantly understated. *An additional 9% of the current total cost would increase the cost ~~by~~ **over three and half billion dollars*** Long-range projects comprise only 22% of the total, indicating an underestimation of need due to possible incomplete reporting. Actual infrastructure needs and costs are probably substantially higher than what was reported.

Short -term Budgeted Projects

Counties and municipalities reported 5,185 **short-term budgeted** needs totaling **\$21,331,230,000 (\$3,832 per capita)** . The six infrastructure types for which counties and municipalities reported the highest **short term budgeted** costs were roads and bridges, schools, sanitary sewer, water supply, government buildings (including libraries), and parks and recreation. The STB category is one for which the most detail exists as more local governments have information readily accessible on their short term budget needs and in particular their budget needs for FY2004 and FY2005.

TABLE 5. Local Government STB Projects by Infrastructure Type

INFRASTRUCTURE TYPE	# OF STB PROJECTS	TOTAL STB COST	STB COST PER CAPITA	% OF ALL STB COSTS
Schools	630	\$6,177,270,000	\$1,049	27%
Sanitary Sewer	485	\$3,814,011,000	\$686	18%
Roads and Bridges	1088	\$2,837,613,000	\$511	13%
Water Supply	496	\$2,428,553,000	\$437	11%
Gov't. Buildings, Inc. Libraries	436	\$1,024,562,000	\$184	5%
Parks and recreation	704	\$809,508,000	\$146	4%
<i>Total</i>	3839	\$17,091,517,000	\$3,013	78%
All Other Types	1346	\$4,239,713,000.	\$819	22%
TOTAL	5185	\$21,331,230,000	\$3832	100%

One reason for these infrastructure types having the highest reported costs may be that are inextricably tied to the health and wealth of communities across Maryland. Local governments are planning for and have more knowledge of needs related to these basic infrastructure types. These are also most of the infrastructure types for which the State has funding programs with local planning prerequisites (see Appendix F. Infrastructure Planning in Maryland).

REASON FOR PROJECT

Counties and municipalities reported the percentage of a project that was needed for "rehabilitation/renovation", "existing unmet demand", "growth" and/or an "other" reason (jurisdictions were provided with space to explain the "other" reason category). Local jurisdictions were not required to complete this field in the survey and consequently 1983 (22%) projects either lacked any reason information or fell into the "other" reason category.

Definitions for each category are:

- ?? **Rehabilitation/Renovation** - Major maintenance and repair projects of existing facilities
- ?? **Existing Unmet** - Provision of new capacity or additional capacity to meet the infrastructure needs of existing residents and businesses
- ?? **Growth** - Provision of new infrastructure or new capacity which is necessary to meet needs generated by new residents and jobs in the jurisdiction
- ?? **Other**

Of the projects with reason information, 3,104 projects (44%) were reported as needed for Rehabilitation/Renovation, with an associated cost of \$11,150,038,000. Existing Unmet Demand accounts for the second highest reason category with 2,138 projects (30%) with an associated cost of \$9,148,638,000. The growth category was nearly as dominant as existing unmet demand, with an associated cost of \$8,830,834,000.

TABLE 6. Local Government Reason For All Projects

REASON CATEGORY	# PROJECTS	% TOTAL PROJECTS	COST OF PROJECTS	%TOTAL COST	COST PER CAPITA
Rehab/Renovation	3,104	44%	\$11,150,038,000	40%	\$2,838
Existing Unmet Demand	2,138	30%	\$ 9,148,638,000	27%	\$1,927
Growth	1,803	26%	\$ 8,830,834,000	33%	\$2,367

Reason for Short -term Budget Type

The plurality of short -term budgeted projects is needed for rehab/renovation, as was the case for all projects, regardless of budget type. The cost for rehab/renovation projects is more than twice as great as the cost of existing unmet demand projects and also significantly higher than the cost of growth -related projects. In the last survey, rehab/renovation projects also accounted for nearly half of the total cost of all projects, but existing unmet demand projects ranked second in terms of the proportion of total costs. Growth -related projects therefore increased in significance compared with existing unmet demand -related projects since the last survey. This change in the nature of needs could indicate that, over the past 3 years, the stresses on infrastructure systems are likely to have resulted more from the unsatisfied needs of new residents than from the dissatisfaction of existing residents with prevailing levels of service quality, in contrast to the last survey. The total cost for all STB projects with reason information was \$14.7 billion, about two -thirds of the reported value of all STB projects.

TABLE 7. Local Government Reason for STB Projects

Reason for STB Project	# Projects	% Total STB projects	Cost	% Total STB cost
Rehab/Renovation	1,813	48%	\$6,787,988,000	46%
Existing Unmet Demand	1,132	30%	\$3,217,075,000	22%
Growth	845	22%	\$4,665,638,000	32%
Total	3,790	100%	\$14,670,701,000	100%

Reason and Infrastructure Type for Short -Term Budgeted Projects

For Short -term Budgeted projects,

- ✍ Roads and bridges were represented nearly equally in the growth and rehab categories.
- ✍ Water supply and sanitary sewer had the heaviest relative weighting in the rehab category.
- ✍ Schools and water supply had the highest representation in growth relative to unmet need.
- ✍ Parks and recreation had the heaviest relative weighting in unmet existing need.

TABLE 8. Local Government Reason for STB by Infrastructure Type

INFRASTRUCTURE TYPE	STB COST OF PROJECTS FOR GROWTH % STB Total Cost	STB COST OF PROJECTS FOR REHAB/ RENOVATION % STB Total Cost	STB COST OF PROJECTS FOR UNMET EXISTING NEED % STB Total Cost
Roads and Bridges	\$871,899,000 (7%)	\$796,500,000 (7%)	\$525,774,000 (4%)
Schools	\$1,538,689,000 (13%)	\$2,182,449,000 (19%)	\$743,601,000 (6%)
Sanitary Sewer	\$493,928,000 (4%)	\$1,071,199,000 (9%)	\$473,270,000 (4%)
Government Buildings, including Libraries	\$108,406,000 (1%)	\$250,989,000 (2%)	\$137,064,000 (1%)
Water Supply	\$502,244,000 (4%)	\$1,359,397,000 (12%)	\$165,180,000 (1%)
Parks and Recreation	\$125,936,000 (1%)	\$104,684,000 (1%)	\$319,176,000 (3%)
Total	\$3,641,101,999 (31%)	\$5,765,217,999 (49%)	\$2,364,064,999 (20%)
<i>All Other Types</i>	\$1,024,536,000 (6%)	\$1,022,770,000 (8%)	\$853,011,000 (7%)
TOTAL	\$4,665,638,000 (32%)	\$6,787,988,000 (46%)	\$3,217,075,000 (22%)

CHANGES IN PROJECT PRIORITY

The 2004 survey requested information from local governments pertaining to changes in project priority since the last survey. MDP was specifically interested in learning if projects had been either demoted or promoted since the last survey. A promoted project could either have had its timetable accelerated or have had its budget status upgraded. A demoted project could have been dropped from the CIP or have been significantly delayed (more than one year) since the last survey. Table 10 presents summary data on the number and cost of projects as well as general reason information for projects where respondents included this kind of information. This table indicates that growth-oriented projects were the most likely to be demoted and rehab projects the least likely to be demoted.

Table 9. CHANGES IN INDIVIDUAL PROJECT PRIORITY SINCE 2001 (\$000s omitted)

	Promoted Projects		Demoted Projects		No Change in Priority	
All Projects	55	\$106,545 (1%)	628	\$2,258,046 (14%)	2801	\$13,731,483 (85%)
Rehab Projects	28	\$24,721 (1%)	189	\$370,649 (8%)	1198	\$4,820,313 (91%)
Unmet Need	12	\$36,311 (1%)	205	\$888,676 (15%)	861	\$4,966,843 (84%)
Growth	15	\$45,514 (1%)	234	\$998,722 (25%)	742	\$3,944,330 (74%)

Table 10 shows how changes in project priority differed by infrastructure type. The general pattern was for the bulk of projects (as measured by total cost) in a particular category to be continuing on schedule since the last survey. This pattern did not occur for roads and bridges and for parks and recreation, however. Local governments responding to this question indicated that 59% of their road and bridge projects and parks and recreation projects were dropped since the last survey. No other infrastructure category had more than 20% of its projects dropped from the CIP. Sanitary sewer was the only category for which the total cost of promoted projects exceeded that of the demoted projects. These patterns appear to be consistent with general financial trends in the state budget over the past few years. State support for road projects has been curtailed in order to help make up the budget deficit. This may have encouraged local governments to delay or drop some of their road projects, which are subsidized by the state. Local governments may also have attempted to alleviate their own well-documented budget problems over the past few years by reducing support for parks and recreation projects rather than other types of more essential infrastructure.

Table 10. CHANGES IN PROJECT PRIORITY BY INFRASTRUCTURE TYPE
(\$000s omitted)

Infrastructure Type	On Schedule	Delayed	Demoted	Dropped	Promoted	Total
Roads/Bridges	\$319,378 (24%)	\$105,888 (8%)	\$124,273 (9%)	\$747,394 (59%)	\$20,524 0	\$1,317,456
Schools	\$868,190 (77%)	\$39,859 (4%)	\$103,869 (9%)	\$104,600 (9%)	\$15,256 (1%)	\$1,131,773
Sanitary Sewer	\$171,559 (59%)	\$49,944 (17%)	\$10,969 (4%)	\$21,501 (8%)	\$38,495 (12%)	\$292,467
Fire and Emerg. Svcs.	\$88,313 (78%)	\$1,626 (1%)	\$3,507 (3%)	\$20,513 (18%)	0	\$113,959
Water Supply	\$138,289 (50%)	\$70,744 (25%)	\$8,518 (3%)	\$56,247 (20%)	\$4,968 (2%)	\$278,765
Parks/Rec.	\$78,398 (23%)	\$13,984 (4%)	\$33,261 (10%)	\$201,049 (59%)	\$12,403 (4%)	\$339,094
Gov't. Bdgs., inc. Libraries	\$127,718 (55%)	\$38,205 (16%)	\$23,986 (10%)	\$32,810 (14%)	\$10,066 (5%)	\$232,784

STB Funding Source

Counties are the primary funding source for each of the infrastructure types, with the exception of roads and bridges, where the federal share was nearly equal to the county share (see Table 11). In fact, counties provided two-thirds or more of the funding for schools, parks and recreation, public libraries, and water supply. Municipalities were a significant source of funds for sanitary sewer and water supply.

It would be instructive to compare the sources of funding for selected STB infrastructure types for counties with sources of municipal funding (see Table 12). The role of the state and federal governments in funding municipal roads is the reverse of their roles in funding county roads. The state's contribution is four times greater than that of the federal government for municipal roads, whereas the federal contribution is more than 10 times greater than that of the state for county roads. Both states and municipalities fund about one-third of the total cost of their road and bridge projects. The state's contribution to municipal sanitary sewer, water supply, and parks and recreation infrastructure is also significantly higher than its contribution toward these infrastructure components when counties are the main provider.

Table 11. County Reported Funding Sources for STB Projects by Infrastructure Type (\$000 omitted)

STB: Infrastructure Type (total cost)	State Source (% total)	Federal Source (% total)	Private Source (% total)	Other Source (% total)	Municipal Source (% total)	County Source (% total)
Roads and Bridges \$2,072,954	\$112,460 5%	\$176,856 (9%)	\$84,289 (4%)	\$39,037 (2%)	\$36,757 (2%)	\$1,623,555 (78%)
Schools \$5,981,678	\$1,110,000 (22%)	\$11,823 (0%)	\$25,280 (1%)	\$14,962 (0%)	0	\$4,819,613 (77%)
Sanitary Sewer \$2,920,281	\$195,667 (7%)	\$47,568 (2%)	\$731,223 (25%)	\$31,122 (1%)	\$512,455 (18%)	\$1,402,248 (47%)
Public Library \$166,453	\$1,600 (1%)	\$43 (0%)	\$1,176 (1%)	(0%)	\$254 (0%)	\$163,381 (98%)
Water Supply \$1,999,146	\$10,269 (1%)	\$13,295 (1%)	\$34,950 (3%)	\$49,788 (5%)	489,093 (24%)	\$1,401,751 (66%)
Parks and Rec. \$608,714	\$138,858 (23%)	\$14,868 (2%)	\$49,828 8%	\$29,627 (5%)	\$7,802 (1%)	\$367,734 (60%)
<i>Total</i>	<i>\$1,568,853 11%</i>	<i>\$264,4522%</i>	<i>\$926,745 7%</i>	<i>\$164,5351%</i>	<i>\$1,046,3608%</i>	<i>\$9,778,27771%</i>

Table 12: Municipal Funding Sources for STB Projects by Infrastructure Type (\$000 omitted)

STB: Infrastructure Type (total cost)	State Source (% total)	Federal Source (% total)	Private Source (% total)	Other Source (% total)	Municipal Source (% total)	County Source (% total)
Roads and Bridges \$324,494	\$139,469 (44%)	\$44,344 (11%)	\$12,233 (3%)	\$22,201 (5%)	\$93,249 (31%)	\$12,999 (6%)
Sanitary Sewer \$346,013	\$21656 (11%)	\$18,517 (6%)	\$78,850 (2%)	\$20,937 (10%)	\$202,966 (70%)	\$3,088 (1%)
Water Supply \$200,512	\$15,095 (12%)	\$10,238 (6%)	\$1,222 (1%)	\$21,598 (15%)	\$151,655 (66%)	\$705
Parks and Recreation \$551,368	\$148,868 (19%)	\$342,965 (3%)	\$590 (1%)	\$2,565 (4%)	\$50,539 (65%)	\$5,842 (8%)
Government Buildings \$53,156	\$1,097 (23%)	\$490 (10%)	\$330 (11%)	\$450 (0%)	\$50,416 (41%)	\$374 (15%)
<i>Total</i>	\$326,183 22%	\$416,553 28%	\$93,224 6%	\$67,750 5%	\$548,822 37%	\$23,008 2%

As costs increase in a time of tight budgets, local governments face greater pressure to create infrastructure that is financially self-sustaining by passing on more of the cost to users, to residents, and/or privatizing infrastructure systems. Counties indicated in the survey that the largest percentage of their overall funding source would come from issuing debt as shown in Table 13, although that was not the case for parks and recreation. This should not be surprising, given the decreases in some revenue sources (e.g., income tax) as well as the extremely low interest rates that resulted from the recent recession.

Table 13. County Source of Local Funds (\$000s omitted)

County Funding Source	Roads & Bridges	Schools	Sanitary Sewer	Gov't. Bdgs, Inc. Library	Parks & Recreation	Water Supply
Revenue/debt \$3,801,416,998	\$708,906 (33%)	\$2,117,073 (41%)	\$64,151 (4%)	\$200,523 (16%)	\$465,285 (39%)	\$245,479 (13%)
Debt \$7,668,769,996	\$1,148,011 (53%)	\$2,828,721 (55%)	\$1,387,147 (85%)	\$642,796 (52%)	\$230,707 (19%)	\$1,431,388 (79%)
Revenue \$5,363,233,998	\$308,385 (14%)	\$236,157 (4%)	\$183,317 (11%)	\$400,916 (32%)	\$494,647 (42%)	\$143,412 (8%)

Municipalities were less inclined to issue debt than the counties. A major reason is that less than 20 municipalities have currently issued debt. The high expenses associated with entering the bond market discourage smaller entities from issuing bonds.

Table 14. Municipal Source of Local Funds (\$000s omitted)

Municipal Funding Source	Roads & Bridges % of Projects ⁸	Sanitary Sewer % of Projects	Water Supply % of Projects	Parks and Recreation % of Projects	Gov't. Bdgs., inc. Library % of Projects
Revenue/debt \$1,132,398,000	\$854,463 (81%)	\$118,950 (41%)	\$109,004 (37%)	\$49,981 (40%)	\$13,880 (22%)
Debt \$393,988	\$123,808 (12%)	\$85,623 (30%)	\$130,922 (45%)	\$29,594 (24%)	\$24,041 (38%)
Revenue \$276,745	\$70,458 (7%)	\$82,245 (29%)	\$52,039 (18%)	\$45,897 (36%)	\$26,106 (40%)

PROJECT LOCATION

It is probably no coincidence that the projects with PFA information are generally within Priority Funding Areas.

Table 15 shows PFA status for the six infrastructure types highlighted earlier. The proportion of an infrastructure type located within a PFA ranged from 73% to 99%. Schools showed the lowest proportion, which is not surprising in view of the fact that Smart Growth legislation exempted them from the purview of the legislation.

⁸ Percent of projects reported for that infrastructure type that had funding source information available on type of funding.

Table 15. County PF A Status (\$000 Omitted)

PFA Designation	Roads and Bridges	Parks and Recreation	Sanitary Sewer	Schools	Public Libraries	Water Supply	Total
Within PFA	\$3,567,918	\$543,442	\$1,514,804	\$3,354,833	\$186,286	\$1,208,688	\$10,375,971
<i>% total cost</i>	89%	82%	94%	73%	95%	99%	85%
Not in PFA	\$441,409	\$122,846	\$90,531	\$1,223,515	\$8,695	\$12,722	\$1,899,718
<i>% total cost</i>	11%	18%	6%	27%	5%	1%	15%
Total	\$4,009,327	\$666,288	\$1,605,335	\$4,578,348	\$194,981	\$1,221,410	\$12,275,689
<i>PFA not applicable or no PFA data available</i>	\$1,436,012	\$263,991	\$1,312,954	\$423,462	\$8,372	\$1,058,198	\$4,502,989

Reason and PFA Status

The projects with reason information reportedly in PFAs had an associated cost of \$9.4 billion (see Table 16). Of the 1,803 county -sponsored projects reported for growth, 1,079 had information concerning their relation to PFAs. Those projects in the PFA had an associated cost of nearly \$1 billion. Of the 3,104 county -sponsored projects reported for rehab/renovation, 1,782 projects had PFA -related information, with an associated cost of \$4.1 billion. Of the 2,138 projects reported for unmet existing needs, 1,220 projects had PFA information, with an associated cost of \$4.2 billion. In summary, the table indicates that growth -related projects are about evenly divided between PFA and non -PFA areas, whereas the other two reason categories of projects are overwhelmingly located inside PFAs.

Table 16. Reason for Projects with PFA Information

	Cost for growth related projects % of Total Cost	Cost for rehab related projects % of Total Cost	Cost for existing unmet need related projects % of Total Cost
Inside PFA	\$995,460,000 53%	\$4,139,315,000 91%	\$4,220,195,000 89%
Outside PFA	\$852,875,000 47%	\$398,896,000 9%	\$499,984,000 11%

D. STATE AGENCY NEEDS

State Agencies reported only on projects conducted and funded by the State without contributions from local governments. Detailed State Agency reports can be found at www.mdp.state.md.us/infrastructuresurvey.

SUMMARY OF FINDINGS:

~~2,099~~ **All Reported Projects costing \$50.1 billion (\$9,014 per capita)**

~~1,254~~ Short -term Budgeted Projects costing \$24.5 billion (\$4,408 per capita)

~~519~~ Short -term Unbudgeted Projects costing \$7.5 billion (\$1,349 per capita)

~~326~~ Long Range Projects costing \$18.1 billion (\$3,257 per capita)

Reason for Projects

~~842~~ Rehab/Renovation costing \$8.5 billion (\$1,529 per capita)

~~358~~ Existing Unmet Demand costing \$9.5 billion (\$1,709 per capita)

~~204~~ Growth costing \$10.6 billion (\$1,925 per capita)

PROJECTS AND COST

State Agencies reported 2,099 infrastructure projects totaling **\$50.1 billion (\$9,014 per capita)**. The five infrastructure types for which State Agencies reported the highest costs were roads and bridges, public transportation, detention facilities, schools, airports, and government buildings (see Table 17).

Table 17. State Agency Needs (\$000 omitted)

INFRASTRUCTURE TYPE	NUMBER OF PROJECTS	% OF ALL PROJECTS	TOTAL COST	% OF ALL PROJECTS COSTS	COST PER CAPITA
Airports	97	5%	\$4,589,993	9%	\$826
Detention Facilities	208	10%	\$2,841,053	6%	\$511
Government Buildings	292	14%	\$3,563,836	7%	\$641
Public Transportation	90	4%	\$6,871,385	14%	\$1,236
Roads and Bridges	310	15%	\$25,089,251	50%	\$4,514
Schools:					
Higher Education	234	11%	\$2,792,046	6%	\$502
Prim., Sec. Educ .	254	12%	\$547,332	1%	\$98
<i>Total</i>	1231	71%	\$45,747,564.00	93%	\$8,328
<i>All Other Types</i>	868	29%	\$4,330,681	7%	\$686
TOTAL	2,099		\$50,078,245		\$4,060

INFRASTRUCTURE TYPES

As noted above, for all State Agencies the infrastructure types with the most reported needs and highest costs are: Airports, Detention Facilities, Government Buildings, Public Transportation, Roads and Bridges, and Schools. These infrastructure types differ from local governments' needs by the addition of detention facilities and airports. This is because the state plays a major role in the provision of these infrastructure types.

BUDGET SCHEDULE

The budget schedule for which State Agencies reported the most infrastructure projects was **Short Term Budgeted**, making up nearly half of all project costs (see Table 18). The relatively few number of long range projects may indicate an under-reporting of this category.

Table 18. State Agency Budget Type (\$000 omitted)

BUDGET TYPE	# OF PROJECTS	% OF TOTAL PROJECTS	COST	% OF TOTAL PROJECT COST	PER CAPITA COST	# PROJECTS WITH NO COST INFORMATION
STB	1,254	60%	\$24,540,468	49%	\$4,415	N/A
STU	519	25%	\$7,479,629	15%	\$1,346	
LR	326	16%	\$18,058,148	36%	\$3,249	

Short-term Budgeted Projects

Short-term Budgeted needs total \$24.5 billion (\$4,415 per capita), with the majority of costs needed for roads and bridges (36%), followed closely by public transportation (31%). The five infrastructure types with the greatest STB need are listed in Table 19. Roads and bridges have traditionally been a major expense item, as growing demands on the road system generate a high level of need for repair work and road improvements. In addition, the state foots nearly the entire bill for public transportation. As Maryland strives to comply with Federal air quality standards, public transportation and compact, mixed-use development around transit stations is quickly becoming one method to attain cleaner air. One barrier to such development is the initial development costs, even though the long term environmental, social, and economic benefits are substantial. Spending for schools has also grown substantially in recent years, with a major capital improvement plan underway for University System schools as well as the demands for primary and secondary school construction attributable to the implementation of the Thornton Act.

Table 19. State Agency STB Projects by Infrastructure Type

STB: INFRASTRUCTURE TYPE	TOTAL STB COST	% OF STB COSTS	STB COST Per Capita	ANNUAL STB COST	Annual STB COST Per Capita
Roads and Bridges	\$7,930,701,000	36%	\$1,427	\$1,321,783,500	\$238
Public Transportation	\$6,831,712,000	31%	\$1,229	\$1,138,618,666	\$205
Detention Facilities	\$2,794,913,000	13%	\$503	\$465,818,833	\$84
Schools	\$2,665,981,000	12%	\$480	\$444,330,166	\$80
Airports	\$2,088,627,000	8%	\$376	\$348,104,500	\$63
<i>Total</i>	<i>\$22,311,934,000</i>	<i>100%</i>	<i>\$4,015</i>	<i>\$2,988,148,167</i>	<i>\$670</i>

REASON FOR PROJECT

State Agencies reported the percentage of a project that was needed for "rehabilitation/renovation," "existing unmet demand", "growth" and/or an "other" reason (agencies were provided with space to explain the "other" reason category) (see Table 20). State agencies were not required to complete this field in the survey and consequently, not every project is accompanied by project reason information (33% of the projects do not have reason information).

Of the projects with reason information, rehab/renovation comprised the greatest need, with 842 projects (60%) and an associated cost of \$8.5 billion (\$1,525 per capita). Although the number of growth projects was less than one-quarter the number of rehab/renovation projects, the total cost of the growth projects was somewhat higher than the rehab/renovation category. The average growth project is considerably more costly than the average rehab/renovation project, apparently. Existing Unmet Demand accounts for the second highest reason category (both in terms of number of projects and total cost) with 358 projects (25%) and associated costs of \$9.5 billion (\$1,701 per capita). It appears that the state is about equally hard-pressed to satisfy needs arising from the influx of new residents as it is to satisfy the needs arising from existing residents.

Table 20. State Agency Reason

REASON CATEGORY	# PROJECTS	% TOTAL PROJECTS	COST OF PROJECTS	COST PER CAPITA	%TOTAL COST
Rehab/Renovation	842	60%	\$8,478,529,000	\$1,525	30%
Existing Unmet Demand	358	25%	\$9,456,139,000	\$1,701	33%
Growth	204	15%	\$10,622,584,000	\$1,911	37%

Reason and Short-term Budgeted

Roads and bridges projects carry the highest reported costs for State Agencies (see Table 21). The bulk of the costs for this infrastructure type is spent for rehab/renovation purposes. The data indicate that the need for repairs on existing portions of state highways is far greater than the need to build roads to accommodate new growth. The demand for public transportation projects, the second largest category in terms of total cost, is fairly evenly split among growth, rehab/renovation, and existing unmet demand. The need for primary/secondary school projects showed a similar pattern with respect to reason. The relative influence of the growth category, however, was second highest for this infrastructure category. This finding is consistent with considerable anecdotal evidence of the lack of permanent facilities to house students in fast-growing sections of the state. Detention facilities have the highest proportion of total cost attributable to existing unmet demand of all the infrastructure types, a reflection of the failure of the state to plan ahead for these facilities. Higher education facilities was the only other infrastructure type for which the existing unmet demand category accounted for more than half of total costs. Spending on airport projects was the most sensitive to growth pressures, with two-thirds of total costs attributable to this factor.

Table 21. State Agency Reason for STB Project

STB: INFRASTRUCTURE TYPE (Cost of the projects with reason info)	COST FOR GROWTH (% Total Infra Type Cost)	COST FOR REHAB/ RENOVATION (% Total Infra Type Cost)	COST FOR EXISTING UNMET DEMAND (% Total Infra Type Cost)
Roads and Bridges (\$6,432,484,000)	\$620,923,500 (10%)	\$3,812,496,500 (59%)	\$1,999,064,000 (22%)
Public Transportation (\$3,880,954,500)	\$1,542,404,500 (40%)	\$1,448,882,000 (37%)	\$889,668,000 (23%)
Detention Facilities (\$183,522,000)	\$14,306,000 (8%)	\$46,472,300 (25%)	\$122,744,000 (67%)
Schools: Primary/Secondary (\$493,334,000) Higher Education (\$2,099,102,450)	\$173,923,000 (35%) \$561,350,500 (27%)	\$185,996,000 (38%) \$380,257,950 (18%)	\$133,415,000 (27%) \$1,157,494,000 (55%)
Airports (\$2,016,858,000)	\$1,341,810,000 (67%)	\$675,048,000 (33%)	\$0
Total	\$4,254,717,500 (28%)	\$6,549,152,448 (43%)	\$4,374,906,000 (29%)

CHAPTER 4: CAPACITY TO FUND INFRASTRUCTURE

Local governments have numerous ways to finance infrastructure. The ability to generate revenue, not only depends on the availability of these opportunities but also on the willingness of a jurisdiction's officials and citizens to make use of the opportunities available for raising funds for needed infrastructure. Funding sources include:

- ?? "Pay as you go" also referred to as "PAYGO" —uses general revenues, such as property and income tax receipts;
- ?? General obligation bonds repaid from tax revenues;
- ?? Private —user fees, impact fees, development excise taxes, hook-up fees for infrastructure to serve new development;
- ?? Revenue bonds repaid from dedicated tax revenues
- ?? Gifts from individuals, foundations, and non-profit organizations;

STATE FUNDING FOR LOCAL INFRASTRUCTURE

Funding sources also include state and federal grants and loans to local governments for infrastructure maintenance and development. State funding streams for FY 2005 by infrastructure type include:

Sanitary Sewer

- ?? Maryland Department of the Environment: Biological Nutrient Removal —\$23.5 million. Provides grants to local governments for the removal of nutrients from the discharge of sewage treatment plants.
- ?? Maryland Department of the Environment: Supplemental Assistance —\$5 million. Grant assistance to local governments participating in the construction of compliance-related wastewater facility improvements.
- ?? Maryland Department of the Environment: Water Quality Revolving Loan Fund —\$11 million. Provides low interest loans to local governments which finance water supply improvements and upgrades. The Safe Water Drinking Act of 1996 and annual federal appropriations set up a schedule of capitalization grants to states to initiate their revolving loan funds. These federal grants require a 20% state match.

Water Supply

- ?? Maryland Department of the Environment: Drinking Water Revolving Loan Fund —\$11.5 million. Provides low interest loans to local governments which help finance water supply improvements and upgrades. Federal government finances this program in same manner as the other water quality fund mentioned above.
- ?? Maryland Department of the Environment: Water Supply Assistance Fund Program —\$2.4 million. Provides grants and loans to assist small communities in the acquisition, design, construction, and rehabilitation of publicly-owned water supply facilities throughout the state.

Public Schools

- ?? Public School Construction Program —\$101.6 million. Provides financial assistance to local education agencies for the construction, renovation, and conversion of public school facilities. Financial assistance is based on the state/local shared cost formula which varies from 50% — 90% based on the wealth of each local government.

Roads and Bridges

- ?? Maryland Department of Transportation: State Highway Administration Construction Program —\$817 million (funds major projects and system preservation private projects).

In addition, the State provides a “Local Government Infrastructure Financing Program,” which provides an efficient and economical means of access to capital markets in order to finance specific infrastructure projects. The Maryland Department of Housing and Community Development (DHCD) issues bonds on behalf of counties, municipalities, and their instrumentalities to finance public purpose infrastructure projects. The program generates savings in the costs of borrowing by pooling the local demand and managing issuance of the bond. A project is eligible for financing through the program if it is planned, acquired, owned, developed, constructed, reconstructed, rehabilitated, or improved by or on behalf of a local government, including its agencies and instrumentalities, in order to provide the essential physical elements that constitute the basis of the public service system.

A. NEED AND EXPENDITURES

LOCAL GOVERNMENT: Need in Comparison to Spending

Statewide, local governments reported infrastructure needs of \$39.5 billion (\$7,107 per capita), which included \$21.3 billion (\$3,832 per capita) budgeted for the next six years, an additional \$7.7 billion unbudgeted (\$1,394 per capita), and \$10.4 billion (\$1,871 per capita) for long range projects.

Annual Need

Over the next 6 years, local governments will need \$3.6 billion (\$648 per capita) annually to meet their short-term infrastructure needs. They have an additional annual unbudgeted need of \$1.3 billion (\$232 per capita).

Recent Local Government Spending

Past rate of spending is one indicator of the amount of capital investment that local governments may spend on infrastructure. In the most recent year for which complete audited financial data is available (2002), county governments spent an annual average amount of \$2 billion (\$360 per capita) for capital projects.⁹ Survey results show that statewide, over the next six years, local governments have an average annual need of nearly **two times** recent annual capital spending by counties.¹⁰

Funding Gap

With an annual budgeted need of \$3.6 billion over the next 6 years (\$21.3 billion total over that period) and annual capital spending of \$2 billion, it will take local governments approximately **ten years** to fund their current short-term budgeted needs. This does not take into account the cost of inflation, if needs are deferred, as the cost will likely increase over time. It is not safe to assume that projects reported as short-term budgeted will receive the appropriate level of funding. For example, a project reported in year three of an approved CIP may not move into year two the following year due to budget constraints or for other reasons. The section of the report entitled “Changes in Project Priority” illustrated the extent of this problem. Historically, there has tended to be a large gap between reported need and actual spending by local governments.

Table 22 and Chart 2 show the extent of the funding gaps for the individual counties of Maryland. There are 8 counties that would appear to spend more on an annual basis than their needs, based on the survey data (Anne Arundel, Caroline, Dorchester, Harford, Kent, Somerset, Wicomico, and Worcester). The size of these “surpluses” ranged from \$34 per capita (Worcester) up to \$521 (Caroline). The conclusions for Caroline and Queen Anne’s

⁹ These data were obtained from annual financial reports each county is required to file with the Department of Legislative Services (“Uniform Financial Reports”) as well as their audited annual financial reports.

¹⁰ This figure is based on annual county capital expenditures as information on total capital spending by municipalities is incomplete. Municipal governments account for only \$2.4 billion, or 8%, of the overall annual need.

Counties were based solely on data received from the last survey (2001), as these counties elected not to participate in the current survey. The incremental nature of capital project decision-making process and the long-lived nature of these projects as well as the partial overlap in the time periods covered by the two surveys (2005-2007) would increase the current relevancy of the data pertaining to needs obtained from the last survey. The remaining 16 counties in the state have funding gaps ranging from \$26 (Talbot) up to Garrett (\$729). The breakdown of these counties by the extent of the per capita relative funding gap was as follows:

Small (0 - \$250):	Medium (\$251 - \$499):	Large (greater than \$500)
Allegany	Baltimore County	Frederick
Baltimore City	Cecil	Garrett
Carroll	Howard*	Calvert
Charles	Montgomery	
Prince George's	Queen Anne's*	
Talbot	Saint Mary's	
Washington		

The reader should be cautioned that the funding gaps of the 2 counties on this list with an asterisk were estimated based on 2001 survey data because neither county elected to respond to the latest survey. The same comment in the preceding paragraph related to Caroline and Queen Anne's Counties would apply to the validity of any conclusions pertaining to these counties. Although the data pertaining to the size of a funding gap or "surplus" for these four counties may not be as supportable as that pertaining to the remaining counties, it is unlikely that the standing of these counties relative to the 20 counties that participated in the latest survey would have changed substantially over a three-year period.

Chart 2. Funding Gaps of County governments

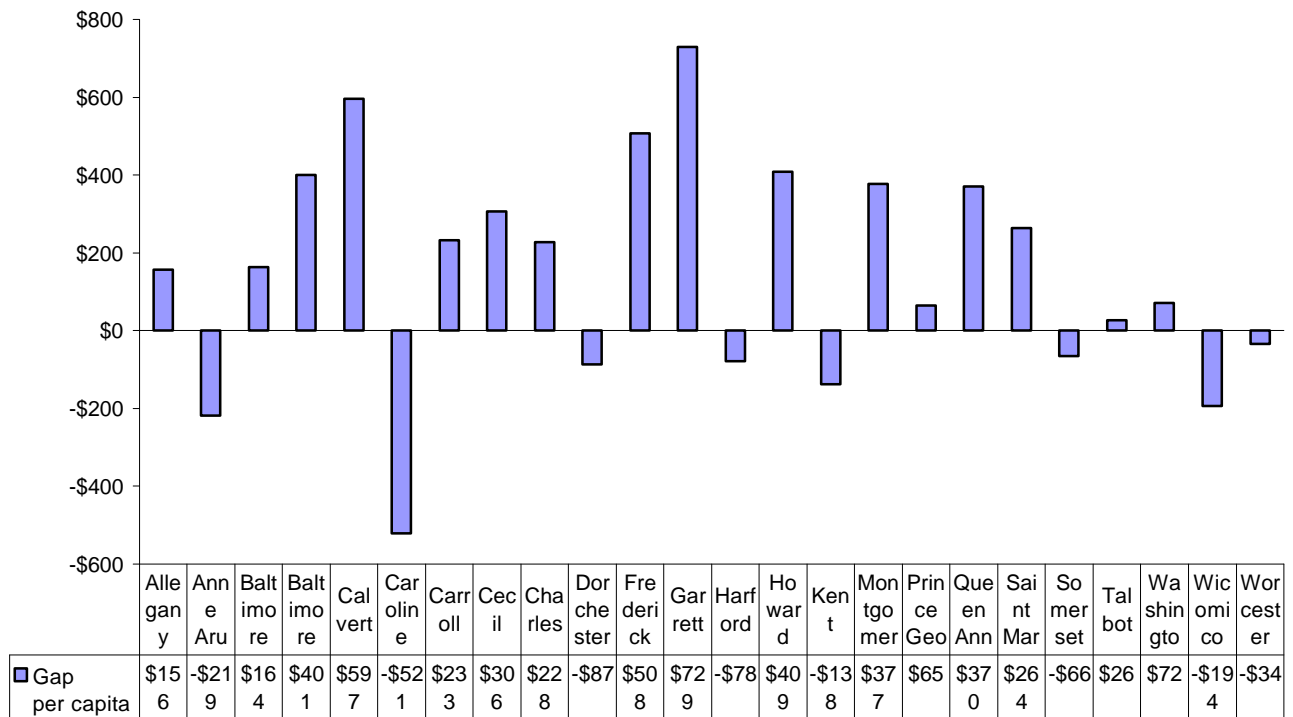
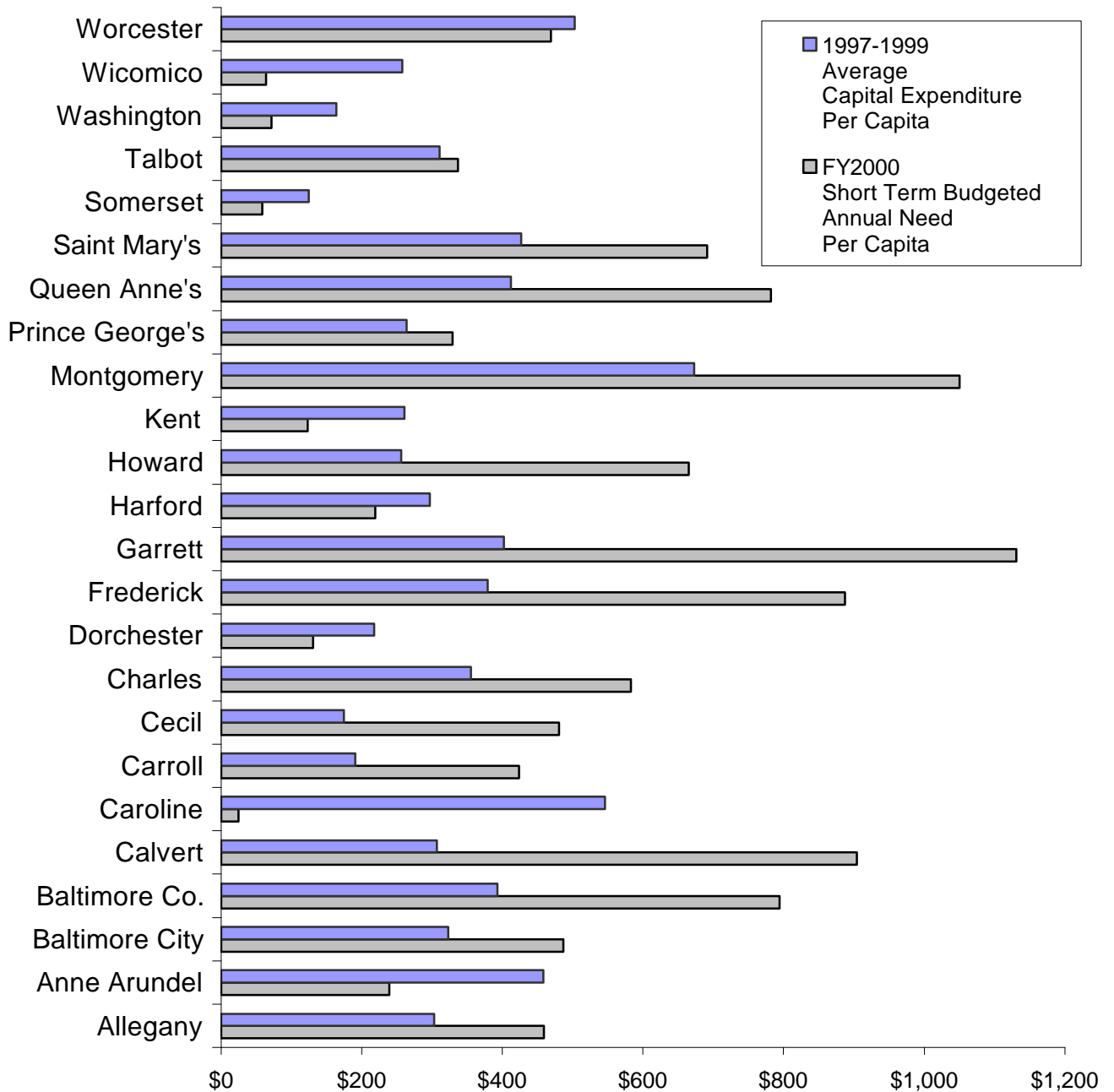


Table 23. County Government Funding Gap

County	STB Annual Need Per Capita	FY 2002 Amount Spent Per Capita	Gap Between Need and Amount Spent Per Capita
Allegany	\$459	\$303	\$156
Anne Arundel	\$239	\$458	-\$219
Baltimore City	\$487	\$323	\$164
Baltimore County	\$794	\$393	\$401
Calvert	\$904	\$307	\$597
Caroline*	\$25	\$546	-\$521
Carroll	\$424	\$191	\$233
Cecil	\$481	\$175	\$306
Charles	\$583	\$354	\$228
Dorchester	\$131	\$218	-\$87
Frederick	\$887	\$379	\$508
Garrett	\$1131	\$402	\$729
Harford	\$219	\$297	-\$78
Howard*	\$665	\$256	\$409
Kent	\$123	\$261	-\$138
Montgomery	\$1050	\$673	\$377
Prince George's	\$329	\$264	\$65
Queen Anne's*	\$782	\$412	\$370
Saint Mary's	\$691	\$691	\$264
Somerset	\$59	\$125	-\$66
Talbot	\$337	\$311	\$26
Washington	\$164	\$92	\$72
Wicomico*	\$64	\$258	-\$194
Worcester	\$469	\$503	-\$34

* Did not participate in latest survey



B. FINANCIAL CAPACITY

Local governments institute a wide variety of approaches to financing infrastructure from the very sophisticated to the simple “don’t fix it until it’s broken” approach, which makes assessing a jurisdiction’s ability to fund infrastructure difficult. It is the aim of this report to provide an indication of which counties might have more difficulty in meeting their reported infrastructure needs. Assessing the financial capacity of local governments requires a review of the existing tax base, taxing level, and the ability to increase or levy taxes and fees as well as the ability to issue bonds. As stated in the 2001 summary report, local governments also use diverse methods for budgeting, bookkeeping and tracking finances. These differences as well as the confusing nature of the interactions among the several factors that can potentially affect the fiscal health of local governments complicate any attempt to compare their ability to fund necessary infrastructure. In some jurisdictions, infrastructure projects are included in years 3 -6 of CIPs and are never moved forward to the currently budgeted years. Another example of the variation in local government infrastructure financing involves methods used for budgeting maintenance needs. Some jurisdictions include maintenance and renovation costs in their operating budget while others include them in their capital budget.

Thus, as in the 2001 survey, this report includes several indicators that are standard measures of a jurisdiction’s ability to fund infrastructure improvements. However, none of the indicators take into account the existence or level of maintenance programs used to preserve the life of each infrastructure type. Such programs may influence the cost to provide well-maintained and adequate infrastructure across the State. The indicators used to assess financial capacity include:

- ?? Population Trends
- ?? Per Capita Assessable Tax Base
- ?? Bond Ratings
- ?? Tax Effort Index
- ?? Tax Capacity Index
- ?? Debt Level to Property Tax Base

Tax Base And Ability To Raise Revenue

Local governments typically rely on three types of revenue sources¹¹: federal grants, state aid, and their own source revenues. Property taxes are one of the largest sources of local revenues and therefore the primary method that local governments have to raise the revenue required to pay for infrastructure. Due to differences in assessable tax base, local governments’ ability to raise property tax revenue varies significantly between jurisdictions. Thus, several measures based on assessable tax base can be used as indicators of a local government’s relative ability to fund infrastructure. These measures include the per capita tax base, the revenue generated by a one cent increase in the property tax, and increases or decreases in tax base over time.

Revenue Generated by 1 Cent of Property Tax

This is a proxy measure for a jurisdiction’s tax base and provides a relative indication of how readily a jurisdiction can raise revenue through its property tax. This measure can be compared to the estimated cost of needed infrastructure, providing an indication of how much property taxes would have to increase in order to fund all of the needed infrastructure.

¹¹ Maryland Local Government: Revenues and State Aid, 2002

The revenue generated by a one-cent property tax varies widely in Maryland counties, from about \$3.00 in Somerset County and Baltimore City up to nearly \$20 on a per capita basis in Worcester County (see Table 23, Increase in Property Tax Needed to Eliminate Gap Between Need and Current Capital Spending). Only 3 other counties in the state generated more than \$10 on a per capita basis (Talbot, Queen Anne's, and Montgomery). Most counties generated less than \$7 on a per capita basis from a one-cent property tax.

To evaluate if local jurisdictions will be able to meet their reported annual short term budgeted needs, it is useful to compare the cost of eliminating their gap between current spending and their need for capital improvements (as measured by the survey) to the amount of revenue generated by a one-cent property tax. The annual level of current capital spending of 8 counties (Anne Arundel, Worcester, Kent, Caroline, Wicomico, Dorchester, Somerset, and Harford) exceeds their needs. None of the remaining counties would be able to eliminate their financing gap by increasing property taxes by one cent, although Talbot County would need only a two-cent increase. On average, counties would have to increase their property taxes by about \$0.45 in order to eliminate their funding gaps. Seven of the counties needed increases on the order of \$.50 or more (Cecil, Baltimore City, Baltimore County, Allegany, Frederick, Garrett, and Calvert), as highlighted in the table. Since all but a few counties currently raise between \$0.90 and \$1.10 for every \$100 of assessed value through the property tax, the typical county with a capital project funding deficit would therefore need to increase property taxes by close to 45% to eliminate its gap. An increase of this magnitude would not of course be politically feasible in today's political environment. It should be noted that no definite conclusion was possible in the case of Howard County because it was the only county surveyed that elected not to respond at any level.

Although Table 23 reveals a close correspondence between the extent of the financing gap and the magnitude of the increase in the property tax rate needed to eliminate this gap for the four counties with the largest gap (Garrett, Calvert, Frederick, and Baltimore County), the relationship weakened considerably for the counties ranked from 5th to 7th in terms of the extent of the needed increase in property tax rates. These counties (Cecil, Baltimore City, and Allegany) ranked from 7th to 12th in terms of the extent of the financing gap. The reason for this seeming inconsistency is their relatively low assessable base per capita, especially for Baltimore City and Allegany County, which makes it necessary for these counties to raise tax rates by proportionally more in order to wipe out the financing gap than would have been necessary for a wealthier county. The relationship between tax capacity and tax effort among the counties is discussed below.

Table 23. Increase in Property Tax Needed to Eliminate Gap Between Need and Current Capital Spending
Bold Type=Relatively High Percent Change

County	Assessable Base per capita	FY2004 Short Term Budgeted Annual Need Per Capita	FY2002 Amount Spent Per Capita	Gap Between Need and Amount Spent Per Capita	Revenue Generated Per Capita by a 1 Cent Property Tax	Needed Increase In Property Tax To Satisfy STB Capital Needs
Allegany	\$36,529	\$459	\$303	\$ 156.00	\$3.15	\$0.50
Anne Arundel	\$90,870	\$239	\$458	(\$ 219.00)	\$8.59	NA
Baltimore City	\$34,354	\$487	\$323	\$ 164.00	\$3.09	\$0.53
Baltimore Co.	\$64,965	\$794	\$393	\$ 401.00	\$6.11	\$0.66
Calvert	\$89,125	\$904	\$307	\$ 597.00	\$7.49	\$0.80
Caroline*	\$51,407	\$25	\$546	(\$ 521.00)	\$4.86	NA
Carroll	\$72,861	\$424	\$191	\$ 233.00	\$6.86	\$0.34
Cecil	\$67,234	\$481	\$175	\$ 306.00	\$6.16	\$0.50
Charles	\$75,728	\$583	\$355	\$ 228.00	\$6.78	\$0.34
Dorchester	\$63,352	\$131	\$218	(\$ 87.00)	\$5.84	NA
Frederick	\$76,538	\$887	\$379	\$ 508.00	\$7.36	\$0.69
Garrett	\$83,635	\$1,131	\$402	\$ 729.00	\$8.02	\$0.91
Harford	\$67,180	\$219	\$297	(\$ 78.00)	\$6.24	NA
Howard*	\$102,225	\$665	\$256	\$409	\$9.64	\$0.42
Kent	\$85,900	\$123	\$261	(\$ 138.00)	\$8.45	NA
Montgomery	\$115,967	\$1,050	\$673	\$ 377.00	\$11.15	\$0.34
Prince George's	\$58,542	\$329	\$264	\$ 65.00	\$5.48	\$0.12
Queen Anne's	\$103,587	\$782	\$412	\$ 370.00	\$10.01	\$0.37
Saint Mary's	\$66,963	\$691	\$427	\$ 264.00	\$6.30	\$0.42
Somerset	\$33,265	\$59	\$125	(\$ 66.00)	\$3.02	NA
Talbot	\$148,085	\$337	\$311	\$ 26.00	\$14.51	\$0.02
Washington	\$57,912	\$164	\$92	\$ 72.00	\$5.33	\$0.14
Wicomico*	\$52,546	\$64	\$258	(\$ 194.00)	\$4.68	NA
Worcester	\$201,817	\$469	\$503	(\$ 34.00)	\$19.87	NA

*Since these counties did not participate in the latest survey, the responses they provided in the 2001 survey were used to estimate the current extent of their funding gaps or surpluses.

Population: Growth And Decline

Population growth trends (see Table 24. Per Capita Tax Base Growth) play an important role in determining infrastructure needs. Population growth not only affects the demand side of infrastructure planning but it also affects local governments' ability to supply infrastructure. A county facing population decline may still have infrastructure needs but, with fewer people from whom to collect fees and/or taxes, these counties may not have funds to meet their needs. Likewise, jurisdictions with rapidly increasing populations may not be able to fund the infrastructure needed to meet growth demands at the desired rate, thereby affecting development patterns. The table shows that 6 counties in the state had growth rates in population exceeding 10% over the 2000 -2004 period (Queen Anne's, Saint Mary's, Charles, Frederick, Carroll, and Cecil). Four counties experienced growth rates of less than 3% over this period (Baltimore City, Allegany, Dorchester, and Kent).

Per Capita Tax Base Growth

Tax base growth or decline and per capita changes have a major affect on a local government's fiscal health. As the tax base per capita increases, a local government can more readily afford the costs incurred to provide infrastructure. When the property tax base declines, the cost of debt (i.e., interest rate paid) increases and revenue to pay for outstanding debt decreases, hindering a local government's ability to pay for new infrastructure or to afford the preservation of existing facilities. The burden to service this debt usually falls on residents of these communities who are left behind. A community with less ability to generate revenue from property taxes may increase user fees, which will inherently impact lower and fixed income families disproportionately. These residents are also paying more while receiving insufficient or fewer infrastructure services. The community's condition may then be exacerbated by its difficulty in attracting economic development projects because of the low level of services and inadequate public facilities. This self-reinforcing process can lead to a downward spiral of decline.

According to data collected by the Department of Legislative Services, eight counties experienced growth of over 30% in their assessable tax base per capita over the 2001 -2005 period (Worcester, Talbot, Queen Anne's, Howard, Garrett, Cecil, Montgomery, and Anne Arundel).¹² Five counties had per capita growth of less than 18% over this same period (Allegany, Baltimore County, Saint Mary's, Wicomico, and Somerset).

As noted above, the relationship among the variables portrayed in these tables is not as simple as might appear at first glance. In theory, the extent of a financing gap should show a direct relationship with the rate of growth of population (which creates demand for additional infrastructure) and an inverse relationship with the rate of growth of the per capita assessable tax base (which would provide the financial resources needed to close any gap). In reality, the picture is a lot more complicated, however. Population growth is only one of several factors that can affect the demand for capital improvements. The age and past maintenance practices of the existing infrastructure can also have a major influence on spending needs. The location of the new residents can also affect these spending needs, as areas with excess well-maintained infrastructure capacity can generally absorb new residents more cheaply than areas along the periphery of development. In addition, counties that have been more successful in attracting commercial development would probably be in a better position to finance needed capital improvements, regardless of population trends or changes in the total assessable tax base, because there is general agreement that commercial

¹² "Overview of Maryland Local Governments: Finances and Demographic Information," Department of Legislative Services, Annapolis, MD, January 2005, Exhibit 25 on p. 47.

development is more likely to pay for itself than residential development. Finally, counties that are experiencing relatively low rates of population growth may still experience increased demands for their services (education, emergency services) if lower income families are replacing middle and upper income families who may be leaving.

The data collected for this report confirm the confusing nature of these relationships among variables that should have an influence on the extent of any financing gaps. There appears to be very little correlation between the extent of the financing gap and relative increases in per capita assessable tax bases (See Table 24). Only one of the 5 counties with the largest financing gaps was ranked among the 5 counties with the smallest increases in per capita assessed tax bases. In addition, only three of the 10 counties with the largest financing gaps were also among the 10 counties with the slowest growth rate of per capita assessed tax base. The relationship between the extent of the financing gap and the rate of population growth was somewhat stronger in the expected direction, however, although there were some major exceptions. Although two of the 5 counties with the largest financing gaps were also ranked among the 5 fastest growing counties in the state, another two counties in this group experienced relatively low population growth rates of 3.5% or less. Among the top 10 counties in terms of financing gap magnitude, 7 also ranked among the 10 counties with the fastest population growth rates.

Tax Capacity Index And Tax Effort Index

To measure and compare the taxing ability of Maryland's counties, the Department of Legislative Services calculates two indexes:

- ?? Tax Capacity Index — compares local government's relative revenue raising ability; and
- ?? Tax Effort Index — compares the extent to which local governments are taxing available resources.

These indexes are derived from revenue data for the twenty-three counties in the state and Baltimore City. The indexes measure the relative revenue raising potential and tax base utilization by comparing local governments with one another, using state averages. The Tax Capacity Index uses average statewide tax rates to compute the hypothetical tax revenue yield from each of several tax sources. This yield is put on a per capita basis and indexed so that 100 is the state average. Thus, a county with a Tax Capacity Index of greater than 100 has **above** average revenue raising potential, while an index value below 100 would suggest that county has below average potential in raising revenues.

The Tax Effort Index for a particular county is calculated by dividing the actual county tax receipts by the calculated *hypothetical* tax revenue yield. The tax effort is also indexed so that the State average is 100. Thus, an index reading above 100 suggests that the county is currently taxing at an above average rate, while a rate below 100 suggests that the county taxing level is currently below the State average. The tax effort is *not* a measure of what the tax level *should be* and therefore, it should not be used to judge whether local governments are taxing too much or too little. The tax effort merely provides an indicator of tax level based on a state average but does not take into account many other factors, which may also determine an appropriate tax effort.

Table 24. Population and Per Capita Tax Base Growth
(bold = high % change)
(Italic=relatively high funding gap)

County	Extent of Funding Gap**	% Change in Population (2000-2004)	Per Capita Assessable Tax Base 2001	Per Capita Assessable Tax Base 2005	2001-2005 Per Capita Assessable Tax Base Difference	% Change 2001 - 2005
Allegany	\$156	-1.4%	\$36,844	\$36,529	(\$315.00)	-0.01%
Anne Arundel	(\$219)	3.9%	\$68,085	\$90,870	\$22,785.00	33%
Baltimore City	\$164	-2.3%	\$28,949	\$34,354	\$5,405.00	19%
<i>Baltimore Co.</i>	<i>\$401</i>	<i>3.5%</i>	<i>\$56,679</i>	<i>\$64,965</i>	<i>8,286</i>	<i>15%</i>
<i>Calvert</i>	<i>\$597</i>	<i>16%</i>	<i>\$75,552</i>	<i>\$89,125</i>	<i>\$13,573.00</i>	<i>18%</i>
Caroline*	(\$521)	4.3%	\$42,044	\$51,407	\$9,363.00	22%
Carroll	\$233	10.1%	\$59,035	\$72,861	\$13,826.00	23%
Cecil	\$306	11.1%	\$52,782	\$75,728	\$22,946	43%
Charles	\$228	12.7%	\$60,617	\$75,728	\$15,111	25%
Dorchester	(\$87)	0.8%	\$49,603	\$63,352	\$13,749.00	28%
Frederick	<i>\$508</i>	11.5%	<i>\$61,430</i>	<i>\$76,538</i>	<i>\$15,108</i>	<i>25%</i>
Garrett	\$729	0.9%	\$63,576	\$83,635	\$20,059	32%
Harford	(\$78)	7.8%	\$54,953	\$67,180	\$12,227.00	22%
Howard*	<i>\$409</i>	7.6%	<i>\$78,047</i>	<i>\$102,225</i>	<i>\$24,178.00</i>	31%
Kent	(\$138)	2.0%	\$69,123	\$85,900	\$16,777.00	24%
Montgomery	\$377	5.5%	\$87,781	\$115,967	\$28,186	32%
Prince George's	\$65	5.2%	\$49,664	\$58,462	\$8,798	18%
Queen Anne's*	<i>\$370</i>	11.1%	<i>\$75,157</i>	<i>\$103,587</i>	<i>\$28,430</i>	38%
Saint Mary's	\$264	10.1%	\$57,636	\$66,963	\$9,327	16%
Somerset	(\$66)	4.5%	\$28,486	\$33,265	\$4,779	17%
Talbot	(\$26)	3.6%	\$98,521	\$148,085	\$49,564	50%
Washington	\$72	5.8%	\$48,573	\$57,912	\$9,339	19%
Wicomico*	(\$194)	4.9%	\$45,172	\$52,546	\$7,374	16%
Worcester	(\$34)	5.2%	\$132,119	\$201,817	\$69,698	53%

* Did not participate in latest survey

** Negative numbers indicate absence of a funding gap

Tax Capacity and Tax Effort Indexes are a reliable measure of relative trends in fiscal well-being. However, they have several weaknesses. The relative nature of these indexes must be kept in mind when interpreting results. For example, a county whose tax capacity index has declined over time is not necessarily losing revenue – its tax base may simply be growing at a slower rate than the statewide average. In addition, because the indexes are based on per capita data, changes in population can affect their movement over time. These indexes also ignore local demand for services and acceptance of higher taxes and fees. In addition, they are not an indicator of an “ideal” revenue mix or level of taxation.

Tax Capacity —There was some correlation between the extent of the financing gap and the ability to generate tax revenue for the counties with the 5 largest infrastructure financing gaps (see Table 25). Two of these counties had tax capacities among the highest in the state (Calvert and Montgomery), another 2 counties had tax capacities very close to the average (Baltimore County and Frederick County), and the remaining county (Garrett) was somewhat below the statewide average. Three of the five counties with the smallest financing gaps had tax capacities that were significantly lower than the state average, although the county with the smallest financing gap had the third highest tax capacity in the state. The data therefore suggest that there might be a slight direct correlation between the magnitude of the financing gap and tax capacity (i.e., larger gaps are generally associated with higher tax capacities), contrary to our expectations. Tax capacity is only one half of the picture, though. The other half --tax effort --could have at least as much potential influence on the size of the financing gap. A lower than average tax effort among counties with relatively high tax capacities could in fact explain the somewhat perplexing finding that higher tax capacities tended to be associated with relatively large financing gaps.

Tax Effort — The above hypothesis was generally supported by the data pertaining to tax effort. The average tax effort of the 5 counties with the largest financing gap was about 20 index points lower than the average tax effort of the 5 counties with the smallest financing gaps. In addition, two of the counties with relatively small financing gaps had tax efforts significantly higher than average, whereas none of the counties with the largest gaps were in this high tax effort category. The reader should not attach too much significance to this finding, however, in view of the potential influence of several complicating factors on these relationships, as noted above.

Table 25: County Tax Capacity and Tax Effort, Bond Ratings
(Fiscal 1998 -2000 Average)

County	Gap Between Need and Amt. Spent Per Capita*	Tax Capacity (1998 – 2000) Averages)	Tax Effort (1996 - 98 Averages)	Bond Rating Standard & Poors Nov. 1999
Allegany	\$156	68	103	A-
Anne Arundel	(\$219)	113	87	AA+
Baltimore City	\$164	54	166	A+
Baltimore Co	\$401	99	95	AAA
Calvert	\$597	132	71	AA
Caroline	(\$521)	64	84	Not Rated
Carroll	\$233	90	87	AA
Cecil	\$306	83	83	AA-
Charles	\$228	97	83	AA
Dorchester	(\$87)	80	89	A
Frederick	\$508	98	85	AA
Garrett	\$729	91	83	AAA
Harford	(\$78)	90	87	AA
Howard	\$409	128	86	AAA
Kent	(\$138)	101	82	Not Rated
				AAA
Prince George's	\$65	83	125	AA
Queen Anne's	\$370	108	80	Not Rated
Somerset	(\$66)	47	91	Not Rated
St. Mary's	\$264	81	79	AA-
Talbot	\$26	144	57	Not Rated
Washington	\$72	78	89	A+
Wicomico	(\$194)	79	93	A+
Worcester	(\$34)			Not Rated

	High Tax Capacity
	Low Tax Capacity
	High Tax Effort
	Low Tax Effort

* Negative numbers indicate absence of a funding gap

Bonds And Bond Ratings

Another way that local governments fund capital infrastructure projects is by issuing bonds. The ease with which a local government can borrow money and the corresponding interest rate depends on the local government's fiscal health and their ability to raise revenue to pay the interest and principal due on bonds. Interest rates also determine how much revenue the jurisdiction needs for interest payments and leaves less revenue available for additional capital spending on infrastructure. Local governments issue two types of bonds: general obligation bonds, "G.O. Bonds", which are repaid from the jurisdiction's general tax revenue and other income; and revenue bonds, which are repaid from a dedicated predictable revenue source such as sewerage and water fees.

Several financial service companies rate a jurisdiction's fiscal health. Potential bond purchasers use bond ratings to determine the relative safety of the bond issue, which will in turn affect the interest rate that a given jurisdiction will have to pay for a bond issue. Standard & Poors rates bonds for Maryland jurisdictions. In general, counties with the highest bond rating would most likely have the greatest ability to raise external funds to finance additional infrastructure improvements. Local governments with high debt ratings have passed the rigorous examination of bond rating agencies for credit worthiness. Higher bond ratings suggest that there is additional capacity to raise debt capital to fund infrastructure investments. However, if too much debt is issued to pay for infrastructure and other capital projects, a local government's bond rating could be lowered. That government would likely face higher borrowing costs and a reduced ability to issue new debt.

In FY 2003, only three of Maryland's 24 counties had AAA ratings (see Table 12): Baltimore County, Garrett County, Howard County, and Montgomery County. Allegany County had the lowest rating (A-), and Somerset, Caroline, Kent, Talbot and Worcester were not rated by Standard & Poor's. The lack of a rating is not necessarily a negative factor – it could merely reflect the fact that a county has chosen not to enter the public bond market in recent years.

Debt Levels

Another approach to evaluate a local government's ability to fund needed infrastructure is the comparison of debt levels with other fiscal measures. Two indicators frequently used are ratios of debt to tax base, and debt expenditure to revenue. These measures are more useful when considered in the context of trends such as the rate and direction that the tax base and revenues are changing over time.

Debt to Tax Base Ratio

In general, a higher debt to tax base ratio indicates that a jurisdiction has a relatively lower ability to fund additional infrastructure than other jurisdictions. This ratio varies considerably for local governments and must be considered along with additional underlying factors to make a judgment on the ability to fund infrastructure projects. For example, a relatively high debt/tax base might not be considered negatively if other underlying fundamental factors such as a growing tax base and population are considered. On the other hand, a low debt/tax base may not necessarily be a positive indication of a jurisdiction's ability to fund needed infrastructure if other dynamics (population and tax base) are negative. Jurisdictions with a relatively high debt/tax base (over 5 percent) combined with little or no growth in the tax base might have a more difficult time with financing additional infrastructure relative to another jurisdiction with a relatively high debt/tax base ratio but with strong growth in the tax base.

Table 26 shows the ratio of debt to property tax base for counties and the trend in this ratio from 1998 to 2003. Maryland counties have debt/tax base ratios ranging from a low of 0.7% in Talbot to a high of 8.1% in Baltimore City. Over this period, Baltimore City was the only jurisdiction experiencing an increased debt/tax base ratio. The ratios of the five counties with the largest financing gaps are also in the middle range of all the ratios. There would therefore not appear to be any correlation between the existence of relatively large financing gaps and relative debt levels.

Table 26. Debt to Tax Base Ratio Trend from 1998 – 2003

County	% Debt/Tax Base 1998	% Debt/Tax Base 2003	5 Year Trend*
Allegany	2.1	1.8	Flat
Anne Arundel	2.0	2.2	Flat
Baltimore City	5.7	8.1	Up
Baltimore Co.	2.3	2.4	Flat
Calvert	1.3	1.6	Flat
Caroline	2.4	2.3	Flat
Carroll	2.4	2.0	Flat
Cecil	1.4	1.4	Flat
Charles	1.8	1.6	Flat
Dorchester	1.5	1.6	Flat
Frederick	2.1	2.6	Flat
Garrett	1.3	1.4	Flat
Harford	2.3	2.1	Flat
Howard	3.9	3.0	Flat
Kent	1.0	1.2	Flat
Montgomery	4.0	3.6	Flat
Prince George's	4.6	4.0	Flat
Queen Anne's	2.0	1.8	Flat
Saint Mary's	2.6	2.6	Flat
Somerset	2.6	2.1	Flat
Talbot	0.7	0.7	Flat
Washington	2.5	2.1	Flat
Wicomico	1.9	1.9	Flat
Worcester	0.6	0.8	Flat

SUMMARY OF FINANCIAL CAPACITY TO FUND INFRASTRUCTURE

Based on the previous discussion, jurisdictions likely to have difficulties in funding their future infrastructure needs include:

- ?? Garrett
- ?? Calvert
- ?? Frederick
- ?? Baltimore County
- ?? Baltimore City
- ?? Allegany
- ?? Cecil

These counties are not necessarily the ones with the greatest gap between infrastructure needs and the amounts spent per capita, however, although there was considerable overlap. The four counties with the largest gaps (Garrett, Calvert, Frederick, and Baltimore County) also needed the greatest increases in their property tax rates to eliminate the gaps. Nevertheless, the gaps experienced by two of the bottom three counties on this list (Baltimore City, Allegany County) were relatively small, ranking 11th and 12th, respectively. The reason they are on the list is the relatively large magnitude of the increases in property tax rates that would be needed to eliminate their financing gaps, all of which amounted to \$0.50 or more on \$100 of assessed value. In addition, Baltimore City has the lowest financial capacity and the highest tax effort level of any county in the state. Allegany County had the second lowest tax capacity in the state, although its tax effort level was only slightly above the median level. The bond ratings of these two counties were also below the AA level. Although Montgomery County had the 5th largest financing gap, it would need a relatively small increase of \$0.34 to eliminate it, so it was left off this list.

The following counties did not appear to be under-spending on their future infrastructure needs based on survey data they submitted:

- ?? Caroline
- ?? Wicomico
- ?? Kent
- ?? Dorchester
- ?? Somerset
- ?? Harford
- ?? Anne Arundel
- ?? Worcester

Two of these counties, Caroline and Wicomico, however, did not provide useable responses to the latest survey of infrastructure needs. Data they submitted to the previous survey conducted in 2000-2001 was therefore substituted in order to estimate the relationship between needs and available financial resources. As noted in a previous section, while the precise magnitude of any possible gap between needs and actual spending levels cannot be estimated with as much probability as was the case for the counties that submitted more timely data pertaining to their infrastructure needs, the magnitude of their financing gaps or surpluses relative to other counties in the state are unlikely to have changed much over the three years since the last survey.

APPENDIX

A. SURVEY METHODS —2004 VERSUS 2001

The legislation which directs the Maryland Department of Planning to undertake an infrastructure needs survey, states that:

“The Office of Planning shall complete surveys of municipal, county and State governments for infrastructure needs and shall maintain a list of needed projects that includes information relating to the financial capacity of the affected unit of government to undertake such projects.” (Maryland Code, State Finance and Procurement Article Section 5-7B-09).

While this section of the Code does not state how often the survey should be taken, MDP has adopted the practice of updating the survey every three years. The 2004 survey update was designed as an interactive web site, similar to the 2001 update. Local jurisdictions and State Agencies were contacted in early September 2004, provided with instructions on how to complete the survey, and given a deadline for completion of Oct. 22, 2004. This deadline was extended twice, and new information was accepted up until January 31, 2005. Several follow-up calls were made to ensure a maximum possible response. Nevertheless, the level of detail provided by respondents differed significantly, with some electing to complete Part I only, which asked general questions pertaining to infrastructure planning practices and adequacy, without providing any of the project-specific information requested in Part II. Those who attempted to respond to Part II also had varying response rates, selectively updating projects while providing varying levels of detailed information on individual projects. Variations are primarily due to staff capacity at the local and state level and whether or not the respondent has an existing capital improvements program, which could easily be referenced to complete the survey with the addition of long term projects.

Survey design

MDP sent survey correspondence to multiple government officials in each jurisdiction or state agency since several local offices in medium size or large communities often share responsibility for infrastructure planning and capital project financing. For example, the Director of Public Works as well as individuals with responsibility for preparing the Capital Budget in the budget or finance office may have been contacted in addition to individuals with similar responsibilities in the planning office. Each jurisdiction or state agency was assigned a unique user name and password in order to limit the possibility of unauthorized access to the system. As in 2001, survey participants were afforded the option of allowing others outside their jurisdiction or agency to view information provided on what projects were being planned and the associated project information, including cost and reason for the project.

The survey has two sections. The first section is a self-assessment asking for contact information and 23 questions related to infrastructure planning and adequacy. The second section asks for specific project information (description, location, budget type and status), funding information (sources of funding), and reason for the project (rehabilitation/renovation, growth, existing unmet need).

Data review

The data was reviewed for double entries of the same project between and among jurisdictions as well as state agencies. Because the survey asked that project costs be reported in thousands, attention was paid to make sure this was done. Jurisdictions and state agencies were contacted if data problems seemed to exist. For the first time in conducting these surveys, key fields were made mandatory to ensure that the most essential information would be collected.

Response Rates

As noted in the main body of this report, the response rate was lower in this survey than for the previous one conducted in 2001. One possible factor may have been that the previous survey was released in the month of May, whereas this survey was released in September. The original intention was to release the survey in June, but changes made to the 2001 survey questions in order to obtain more useful and detailed information required more programmer time than had been anticipated. Many local jurisdictions and state agencies begin their budget cycles for the next fiscal year (which generally begins in July) in the fall, which limited the availability of staff time for special projects, such as this survey. MDP was forced to release the survey at this somewhat inopportune time in order to maintain the three-year survey cycle.

The response rate for counties as a group was considerably higher than that for the municipalities. In addition, among the municipalities, the response rate was generally higher for the larger jurisdictions. The counties updated an average of two-thirds of all the projects they had included in the 2001 survey, whereas the municipalities updated slightly below one-half of all their on-going projects as of 2001. This difference in response rate is highlighted by the fact that whereas only 4 of 24 counties in the state (including Baltimore City) elected not to respond in any manner, 82 of the state's municipalities did not provide any data on their individual projects, approximately one-half of the total number. In addition, the smaller municipalities were considerably less likely to respond than the larger one, as evidenced by the fact that the response rate of municipalities with less than 40 on-going projects (as of 2001) was little more than half that of the municipalities that listed more than 40 projects (33% vs. 63%). Although the municipal non-respondents were primarily very small towns with less sophisticated capital planning methods, the group also included Annapolis, Cambridge, and Hagerstown.

Part of the reason for the reduced response rate to this survey is related to the ambiguity of the survey instructions. Survey participants were offered several more alternatives for indicating the status of individual projects in this survey than in 2001 and were also asked to indicate the reasons for any change in status, unlike in 2001. For this reason, they may have assumed that projects that had not changed much since the last survey (e.g., cost, budget status, expected completion date) did not require an acknowledgement of this unchanged condition. The directions did not explicitly state that some response was expected for all projects listed in the 2001 survey, although they indicated that "no change" in status was one of the response options. This suspicion was confirmed through conversations with several participants who had not bothered to update all of their previously listed projects. As a result, the response rate tabulations discussed above probably understate the effective individual project response rates.

Analytical Considerations

The analysis of the survey data generally followed the same format as in the previous survey, although there were a few key differences. One of these was that the responses of the municipalities were not examined apart from the responses of the counties, with a couple of exceptions. The data was aggregated in order to minimize the possibility of unrepresentative responses unduly influencing the group totals or averages, which is often a problem associated with low response rates. The responses received from the counties were much more representative of all counties in the state. The influence of the county data on the combined county and municipality responses was considerably greater than that of the municipalities, as evidenced by the finding that the short-term budgeted infrastructure needs reported by counties were about ten times greater than those reported by municipalities. Another justification for combining the counties and municipalities is the considerable amount of overlap between the types of infrastructure projects undertaken by them, which would minimize the possible loss of information resulting from examining only the combined results. A review of Appendix G, which lists total spending of counties and municipalities for all short-term budgeted projects by infrastructure type, shows the extent of this overlap.

In order to provide a more complete picture of recent trends in infrastructure provision and finance, MDP included the projects that had not been updated since the last survey in the analysis of local government projects. As noted above, it was likely that the status of these projects had not changed materially since the last survey, or that they were proceeding pretty much on schedule. Had these projects not been incorporated in the analysis, the result would have been to understate infrastructure needs relative to spending levels. Respondents were supposed to indicate if projects had been dropped or completed since the last survey. The fact that they did not indicate that these changes in status had occurred would imply that these projects were proceeding toward completion as anticipated in the 2000 or 2001 CIPs. The long time frame of 6 years for most CIPs as well as the multi-year schedules for major projects from planning to completion provide further justification for assuming that the status of projects for which no positive indication of current status had been provided had not in fact changed (as defined above) since the last survey.

Another major difference related to methodology between this survey and the previous one is that current spending on capital projects by local jurisdictions in the state was found to be about twice as high in this report as the 2001 Survey Update had reported. The reason is not that local jurisdictions had doubled their spending on capital projects during a time of much documented budgetary tightness and national economic recession. The answer lies more in differences between the sources of the financial data for the two reports. The previous survey report relied solely on summary data pertaining to counties that is included in a publication of the Department of Legislative Services (DLS) entitled "Local Government Finances in Maryland" that is published on an annual basis. Discussions with Kathy Benton of DLS revealed that the scope of the total capital spending data used in the last report was limited to capital project funds. In fact, the general funds of counties are often used for this purpose in addition to capital project funds. In addition, the capital spending figure used in the last report excluded primary/secondary education, community colleges, and library capital spending because this spending is not directly controlled by the counties. The result was a vast underestimate (approaching 50%) of total capital spending by counties.

This report derived capital spending data on an individual county basis from the Uniform Financial Reports they are required to submit to the state every fiscal year. This data tends to be more consistent than that contained in their consolidated annual financial reports. It also includes spending on capital type projects regardless of the particular fund that was used to finance it. This data was supplemented with data derived from annual reports prepared by the primary/secondary education boards, the library, and community college boards, which are considered component units of the county governments and are therefore responsible for preparing their own financial reports.

The other factor that contributed toward the vast overestimate of the actual funding gap between infrastructure needs and spending levels in the 2001 report was problems in data entry that were not corrected. The problem was that the data entry person entered whole dollars for some projects instead of thousands of dollars (as directed by the survey instructions), thereby vastly overstating the magnitude of their perceived needs and associated costs. Data from two counties in the state — Calvert and Washington — was clearly distorted by this undetected problem. Each of these relatively rural counties had per capita infrastructure needs totals that were so high compared with other counties in the state that they were literally off the chart. As a result, their funding gaps were falsely estimated to be 10 to 30 times those of the county with the next biggest gap. For example, the reported STB annual need for Washington County was reported as amounting to about \$25,000 per capita. This need was reported as being under \$700 per capita in all the remaining counties in the state, with the exception of Calvert County, which reported a need of about \$7,000 per capita. The total amount of the overstatement for both counties approached \$7 billion, which resulted in an overstatement approaching 50% in the reported STB needs of counties in the state. These data entry mistakes were corrected in this report.

B. WHAT ARE WE LOOKING FOR? An Ideal Scenario

This section seeks to provide a standard against which we can compare the 2004 survey results.

It will discuss ideal hypothetical findings to illustrate how the results would turn out if Maryland was meeting the infrastructure needs of communities and growth demands within priority funding areas by properly inventorying, maintaining and funding infrastructure projects.

The Self-Assessment Section

The most widely accepted tool for infrastructure planning is the Capital Improvements Program (CIP), which usually covers six years of capital improvements. CIP's are typically linked to the jurisdiction's long-range development plans and outline major projects, the time frame for completion, and the capital expenditures related to each project. CIP's also identify methods for financing the projects, and in some cases, estimate the fiscal impact on the jurisdiction's revenues and operating budget. CIP's are an essential tool in planning for long-term capital needs and a planning process required to support Smart Growth.

Ideal infrastructure planning requires a CIP, Maintenance programs, the use of life cycle costing. The percent of jurisdictions responding yes to these questions should be high.

Budget Type

Hypothetically, the survey should report a balance between short term budgeted projects and long-range projects, indicating an awareness of both current and future needs.

Reason

CIP's should include projects needed to carry out a jurisdiction's comprehensive plan with projects moving through the six-year cycle as planned to avoid additional costs that may result from deferment. Ideally, none of the projects should be needed to meet existing unmet demand, as all projects would be funded and completed in a timely manner. Similarly, projects needed for growth should be located in growth areas.

Funding

Jurisdictions should employ fiscal plans so that sufficient funds can be drawn from or debt issued that does not overburden the taxpayers or infrastructure users to pay for capital projects. Such fiscal plans could involve taxing at an effort commensurate with tax capacity or setting up investment funds to pay for the maintenance of infrastructure. Ideally, no jurisdictions would have exorbitant gaps between their short-term budgeted needs and their capital expenditures. This would also mean that jurisdictions would have funding sources identified for 100 percent of the cost of short-term projects and a majority of the long-term projects.

Infrastructure Type

Infrastructure types should include a wide range representing the needs of the communities. There should not be an under-funding of one infrastructure type from year to year, nor should one type of infrastructure receive more than its "fair share" of funding from one year to the next. Infrastructure expenditures should reflect the priorities of the State of Maryland and of the individual jurisdictions as explained in their comprehensive plans.

Conclusion

It is important to set a goal of how Maryland should be equipped to foster Smart Growth based on the sound practice of infrastructure planning and financing. Quite often infrastructure is not visible and therefore easily overlooked for higher profile endeavors. Poorly maintained infrastructure is not only expensive to repair but can also put the public's and environment's health at risk from such things as failing bridges which may collapse, sanitary sewer overflows

contaminating our water supply, and development with no preservation of open space. e. Maryland needs to take a serious look at the condition of its infrastructure and future capacity needs in order to maintain the quality of life Marylanders expect as the population increases and development pressures continue.

C. INFRASTRUCTURE

Importance of Infrastructure

Infrastructure systems are integral to the social, political, and economic fabric of life. They affect the quality of transportation, condition of buildings, availability of open space, school capacity, resident's proximity to public libraries, the cleanliness of drinking water, access to electrical power and communications, and the efficacy and safety of waste management. Infrastructure affects the shape and patterns of growth as well as the potential for redevelopment. The maintenance and improvement of infrastructure systems may not receive consistent attention because they are so pervasive, complex, and seemingly invisible. However, the public expects infrastructure facilities to bring reliable power, clean water and other public services. Overtime, as people commute further, use more water, and dispose of greater quantities of wastes these expectations have increased. Today, taxpayers have higher standards for infrastructure to uphold as they are increasingly affected by insufficient systems — congestion, bridge collapses, water main breaks, halted development, and health risks related to the quality of infrastructure — which are also impediments to economic growth and to a positive quality of life.

A major premise behind the Smart Growth goal to direct growth to designated areas is to save taxpayer dollars by using existing infrastructure rather than building new infrastructure to support sprawl development. In a statewide infrastructure study (May 1997), South Carolina recognized the cost savings that exist by using infrastructure with excess capacity. South Carolina addressed reducing costs related to infrastructure construction by attempting to alter development patterns to achieve savings related to costs of sprawl by using existing infrastructure. State and local governments make a tremendous investment in infrastructure and need to maintain those valuable resources to capitalize on their investment over time. Maryland has Smart Growth laws but may not be benefiting from the potential cost savings as existing infrastructure requires rehabilitation and renovation and in some cases needs additional capacity to support areas planned for growth.

Infrastructure Maintenance

Infrastructure is at the core of economic development and community vitality, however most people do not even notice its importance until there is a failure. Until there is a failure, the maintenance and improvement of infrastructure typically receives marginal fiscal resources. The result is a steady deterioration in the physical condition and quality of service. Consequently, when infrastructure failures do arise, the cost for replacement or repair is usually exponentially more than if a thorough, consistent plan of maintenance had been fully funded and implemented. The cost to rebuild a street is fifteen times more than maintaining it properly in the first place¹³.

Nationally there has been an annual shortfall between capital spending and infrastructure needs. The American Society of Civil Engineers recently graded America's infrastructure and gave it a Grade Point Average of "D+" with total investment needs for twelve infrastructure types (roads, bridges, transit, aviation, schools, drinking water, wastewater, dams, solid waste, hazardous waste, navigable waterways, and energy) equaling \$1.3 Trillion. Maryland is neglecting to maintain and provide quality infrastructure with adequate capacity for present and future use.

Maryland had a number of recent episodes of failed infrastructure, many of which made headlines in area newspapers. One of the leading ramifications of these failures is the risk to public health, notwithstanding citizen's inconvenience from the resulting traffic jams, delayed flights and the increased travel time to find a public library or recreation space. Infrastructure is the cornerstone of daily life and economic activity. Yet infrastructure maintenance is frequently passed over for a more politically advantageous or "sexy" project. The consequence is often infrastructure disasters requiring multiples of what the maintenance program would have cost. The other

¹³ Governing magazine, February 2002

consequence of inadequate public facilities includes delayed development. A developer will most likely find a location where a project can be implemented immediately rather than expending the carrying costs to wait for adequate facilities. And, while a developer may contribute to the costs of installing new infrastructure, it is unlikely that he will contribute to its maintenance, so funding must be secured elsewhere to preserve the life of the infrastructure.

There are tremendous cost savings to be had for those who follow a maintenance program and who use evaluation methods, such as life cycle costing, so that the full cost of infrastructure, including maintenance, is considered before it is even procured. Life cycle costing (LCC) evaluates all significant costs of the infrastructure over its life — concept/development, design, construction, operation, maintenance, removal/demolition — not just the initial capital costs. For example ¹⁴, Denver used LCC to select road materials. The City of Denver analyzed whether to use concrete and asphalt pavement and found that although concrete pavement had a higher initial cost the annual maintenance of concrete in Denver was less than it would be for asphalt taking into many variables such as weather, volume of buses and trucks, and lane widths. Denver chose concrete pavement because it could decrease the City's cost of street maintenance overtime. Furthermore, the federal government requires LCC to be used to justify funding for any organization depending on federal funds for highway infrastructure and transportation facilities, as stated in the Intermodal Surface Transportation Efficiency (ISTEA) Act of 1991.

Governing Magazine emphasized the importance of infrastructure maintenance through their "Government Performance Project" ¹⁵ (GPP). One of the components of the project was to examine county governments management of their capital assets. The report highlighted the predicament counties are facing with decreases in state and federal government funding for many programs thereby increasing the competition for property tax dollars among the various components of county government. Some counties have innovatively addressed the shortfall in supplemental funding sources while others seem to be struggling. The GPP sites three crucial factors in capital management at the county level; "maintenance, maintenance and maintenance". This requires sufficient funds for "renovation and rehabilitation" of facilities, a category of the infrastructure survey that will be discussed throughout the remainder of this report. The point that needs to be stressed in regard to deferred maintenance is that deferring maintenance on infrastructure results in long run maintenance costs that are often prohibitively expensive. Additionally, because funds are limited, local governments and counties in particular, need to have a sound inventory of their infrastructure with corresponding maintenance programs. Subsequently, they need to link their jurisdiction's growth plan to a capital improvements program by incorporating the fiscal impacts of implementing their comprehensive plan so that they can spend limited funds effectively and purposefully.

Infrastructure Planning

By including a mandate to survey infrastructure needs across the State, the General Assembly recognized that if Smart Growth is to sustain itself, it will be necessary for communities to have adequate and well-maintained infrastructure. Without such infrastructure, Maryland's communities will find it difficult to accommodate projected growth in priority funding areas or to provide the level of services needed to meet the needs of residents and employers in existing communities. MDP's Infill and Redevelopment Models and Guidelines cites the lack of funding for infrastructure maintenance and renovation as a major obstacle to infill and redevelopment. Infill is a viable long-term method of reducing pressures for sprawl development. It capitalizes on existing infrastructure and minimizes the need for costly new infrastructure. Components of a successful infill strategy include targeting infrastructure renovation and maintenance projects to areas where infill is desired (M&G 23).

¹⁴ Ofori-Darko, Francis. Life Cycle Costing of Civil Engineering Projects: Methods and Some North American Experiences. July 11, 1997. pp. 17.

¹⁵ Governing magazine, February 2002

Frequently, residents attribute congestion and facility inadequacy to a “lack of planning” or “poor planning”, however in most situations, the planning has occurred but the ability to target facility investment is hampered and/or the maintenance of infrastructure systems has been deferred to the point that the cost of bringing the infrastructure up to expected standards becomes out of reach. Ill-maintained and inadequate infrastructure may push development to areas where adequate infrastructure exists or to areas that will require the construction of facilities thereby escalating the infrastructure funding “needed” for a jurisdiction. A number of local governments have adopted Adequate Public Facility Ordinances that require sufficient schools, roads and other facilities to be available prior to new development. APFOs are designed to curtail development where public facilities are inadequate to support it, and to delay development in planned growth areas until adequate service levels are in place or reasonably assured (Models and Guidelines publication 96-06). However, the areas a jurisdiction designates for growth are often the very areas with inadequate capacity of public facilities, while excess capacity is located in areas where new growth is neither planned nor occurring as rapidly. Any widespread inability to meet present and future infrastructure needs in designated growth areas poses a major obstacle to Smart Growth goals. d

D. GASB-34

The Governmental Accounting Standards Board is a private, non-profit organization formed in 1984 to develop and improve accounting and financial reporting standards for state and local governments. GASB is responsible for setting generally accepted accounting principles for both state and local governments. Statement 34¹⁶ established new financial reporting requirements for state and local governments, requiring additional information in their annual reports. This statement required that all current and long-term assets and liabilities, such as infrastructure and general obligation debt, should be reported in government-wide financial statements so that readers can learn more about how well government officials are doing in providing for the long-term needs of their residents in a financially responsible manner.

GASB 34 recognizes the link between proper maintenance and sound fiscal accountability. There are significant cost savings to continual preservation efforts, and the resulting cost savings can be used elsewhere. GASB 34's infrastructure reporting requirements are aimed at providing more comprehensive cost information upon which to make informed judgments about the ability of governments to repay their debts and support their service obligations. The investment companies that underwrite bond issues want to ensure that what they are investing in is being properly cared for after it is constructed. Using the infrastructure survey to keep an up to date inventory of eligible infrastructure assets can partly fulfill GASB 34's Modified Approach requirements¹⁷. As stated in the PricewaterhouseCoopers report, GASB 34 has the potential to focus greater attention by legislators, budget analysts, infrastructure agency managers, and the investment community on infrastructure maintenance and preservation. The goal was to make governments more accountable for the condition of their roads, bridges, and other major types of infrastructure to taxpayers, businesses, rating agencies, creditors and investors.

¹⁶ PricewaterhouseCoopers: "Understanding GASB 34's Infrastructure Reporting Requirements", October 1999.

¹⁷ The Modified Approach allows governments to record the current costs of preserving eligible infrastructure in lieu of depreciation.

E. INFRASTRUCTURE TYPES WITH THE HIGHEST REPORTED NEED: What Is Their Relation To Smart Growth?

Roads and Bridges — one way to reduce costs would be to maintain existing roads and bridges infrastructure while promoting — Smart Growth development. Population and employment growth inherently increases the demand for roads and bridges. Inflation increases all infrastructure costs, which during recent years in Maryland attributed to an increase of annual costs between two and three percent. Both of these facts increase the costs of providing roads and bridges infrastructure. Reducing the demand for more roads and bridges would curb costs. Conventional suburban development — low-density, single use development — has been and still is the dominant land use pattern in the State. This type of land development increases the distances between origins and destinations creating an average of 11 household automobile trips per day. Additionally, more roads and bridges are needed for this type of land use. Therefore Cost reductions will also be found through increases in air quality by reducing vehicle miles traveled and thereby lessening the need for other more costly techniques to meet the Environmental Protection Agency's Clean Air Standards.

Schools — the greatest savings can be achieved through Smart Growth techniques of maximizing the use of infrastructure; making better use of existing school capacity, building new schools where roads and sewers and water systems are already in place, sharing space with compatible services (library and recreation facilities) and extending the life of existing school buildings. The cost of school construction has continues to steadily rise over time. As the built environment expands, the availability of desirable school sites shrinks and demand drives the land values upward. In 2001 the Public School Construction Program estimated construction costs at \$104 per square foot. In 2006, the state estimate is \$157 per square foot. A 50,000 square foot elementary school will cost \$2.7 million more today than just five years ago.

Parks and Recreation — parks and recreation space are critical to the quality of life in communities and often make higher residential densities more attractive while providing positive environmental effects. However, Parks and Recreation systems are affected by increases in both the cost of real estate and construction. As real estate becomes more expensive, the cost to purchase land for public open space often becomes prohibitive for local jurisdictions. Park and recreation space exactions and land set asides from development transfer the public costs to acquire land to the private market, although this may decrease a developer's ability to provide affordable housing or to lease commercial space at low rents. This is why a major stated purpose of Program Open Space is to provide funds for acquisition of land in advance of planned development and increased land values driven by speculation.

Water Supply — all neighborhoods require clean water systems but as costs increase to meet water quality and security¹⁸ regulations, creative financing and innovative rate structuring will be needed to keep the costs affordable. Water Supply systems vary according to the number and purposes of water uses required in a region. The system includes water source, transmission mains, treatment facilities, distribution systems, and service connectors.

Sanitary Sewerage — meeting the needs associated with sanitary sewer systems is strongly connected to furthering the goals of Smart Growth. For example, addressing sanitary sewer overflows has immediate benefits for growth by reducing the entry of rainfall into the system and allowing more capacity to convey sewage, thereby accommodating projected growth without expanding or building new facilities. However, costs associated with Sanitary Sewer Systems have increased as efforts are made to reduce the amount of nutrients discharged through secondary (removing organic matter through biological processes) and tertiary (eliminating pollutants not removed by

¹⁸ Project Infrastructure Development Handbook, ULI, 1989 pp. 7

conventional biological methods) treatments to protect the Chesapeake Bay and its tributaries. Sanitary Sewer Systems remove wastewater from the point of origin and transfer it to a point where it can be treated. The waste is treated and safely released into the nearest body of water or the solid waste can be land-applied or incinerated. Rehab and renovation costs have also increased due to aging systems as well as improper maintenance issues such as leaks from cracks in the pipes, which lead to inflow and infiltration problems.

The economic vitality of Maryland rests on the physical condition of its infrastructure. The State of Maryland has already made a commitment to concentrate growth in existing communities. Now a concerted effort must be made to maintain and to provide adequate infrastructure in those areas. Neglecting to do so will hinder economic growth and will lead to even larger infrastructure costs overtime. Currently, infrastructure needs exceed local governments ability to pay for them and if this gap is not addressed, that need will persist and increase resulting in disincentives for businesses to locate and for residents to reside in Maryland.

F. INFRASTRUCTURE PLANNING IN MARYLAND

The State plays a major role in providing funds to local governments for many infrastructure types. With this funding assistance, the General Assembly requires planning to track infrastructure needs and to ensure efficient use of State resources. To be eligible for State funds, local governments must prepare and update plans for roads, schools, and park and recreation facilities. In addition, the Maryland Department of Transportation is required to prepare highway needs inventories and plans for transportation projects and counties are required to have water and sewer plans.

County Water and Sewer Plans

A county must have a water and sewer plan covering at least a 10-year period that is updated every three years. The law mandates that the Plans provide for the orderly expansion and extension of systems in a manner consistent with all county comprehensive plans. The Plans project sewer and water facility demands based on population, planning and zoning information. Each County and Baltimore City is required to have an up-to-date water and sewer plan. Ensuring that these plans are complete is essential to the implementation of Smart Growth so that communities can accommodate growth and properly service existing residents. Water and sewer planning should ensure that the sizing and staging of facilities are adequate to prevent discharge of any inadequately treated sewage or other liquid waste into any waters.

Recent review of the County Water and Sewer Plans have shown that many of the plans are out of date and out of compliance. Bringing these plans up to date would result in greater accuracy in reporting water and sewer facility needs.

Schools

The Interagency Committee on Public School Construction's (IAC) regulations and guidelines require counties to develop and annually update an Educational Facilities Master Plan (EFMP). This plan must be based on population and enrollment projections and be consistent with the county's adopted comprehensive plan. The EFMP includes a facility needs analysis for new schools, additions, renovation, and systemic projects (roof, HVAC, plumbing) and replacements. The IAC has adopted capacity and space guidelines indicating what facilities are eligible for State funding and approves plans for one fiscal year at a time.

Park and Recreation Facilities

Created by legislation in 1969, Program Open Space (POS) dedicates real estate transfer tax revenues for land preservation and development of outdoor recreation facilities. Maryland's Program Open Space law requires each county and Baltimore City to prepare a Land Preservation and Recreation Plan (LPRP) and to update the plan every five years. This plan identifies the jurisdiction's open space and recreation land and facility needs based on population projections and demand analysis of recreation activities. The plan, reviewed and approved by the Department of Natural Resources and the Maryland Department of Planning, qualifies counties to receive a local share of Program Open Space funds from the State.

Transportation Facilities

The Maryland Department of Transportation (MDOT) prepares and annually updates the Consolidated Transportation Program (CTP). The CTP, prepared in consultation with local governments, identifies transportation needs in each county that are planned for State funding during the next six years. In addition to the CTP, MDOT develops a Highway Needs Inventory, which identifies major capital construction projects necessary to serve existing and projected population and economic activity in the State as well as to correct safety and structural problems. The Highway Needs Inventory is updated annually and reflects needs based on technical analysis and adopted local and regional transportation plans. In addition, counties and municipalities in Major Metropolitan Areas participate in their Metropolitan Planning Organizations, which prepare long-range plans for needed transportation facilities.

Historically, the focus of these regional plans has been highway facilities; however, there is increased recent attention to bicycle, pedestrian and public transportation facilities.

APPENDIX G. SHORT -TERM BUDGETED COST BY INFRASTRUCTURE TYPE
(\$000s omitted)

Infrastructure Type	State Agencies	Counties	Municipalities
Airports	\$2,088,627	\$142,805	\$260,328
Community Colleges	\$96,607	\$484,488	0
Cultural Facilities	\$10,176	\$88,837	\$33,081
Dams	\$53,600	\$300	\$130,042
Detention Facilities	\$2,794,913	\$340,592	0
Economic Development	\$134,118	\$439,179	\$44,556
Environmental Mitigation	\$1,240	\$12,713	\$75
Fire Facilities	0	\$218,110	\$19,767
Government Buildings	\$860,483	\$767,339	\$72,136
Health and Human Services	\$396,866	\$98,005	\$2,804
Housing	\$150	\$6,472	\$1,820
Judicial Courts	\$101,058	\$92,568	\$50
Open Space	\$14,458	\$93,812	\$47,582
Other	0	\$55	0
Parking Facilities	\$2,917	\$208,871	\$61,788
Parks and Recreation	\$285,408	\$882,872	\$86,476
Police Facilities	\$30,932	\$194,921	\$21,456
Ports	\$655,877	\$19,101	\$13,966
Public Libraries	0	\$185,048	\$40
Public Transportation	\$6,831,712	\$135,364	\$16,242
Rail	\$20,218	\$8,059	0
Roads and Bridges	\$7,930,701	\$2,478,937	\$358,677
Sanitary Sewer	\$6,630	\$3,475,539	\$338,472
Schools	\$2,665,981	\$6,134,264	\$43,006
Shore Erosion Control	\$1,598	\$250	\$741
Sidewalks	\$1,818	\$146,881	\$10,095
Solid Waste Disposal	\$51,156	\$312,521	\$30,259
Stormwater and Drainage	0	\$301,223	\$75,990
Street Lights and Street Scaping	0	\$61,400	\$20,431
Telecommunications	\$31,000	\$34,117	\$100
Water Supply	\$19,157	\$2,227,121	\$201,432

H. MARYLAND COUNTY GENERAL OBLIGATION BOND RATINGS ¹⁹

County:	Rating
Allegany	Baa1
Anne Arundel	Aa1
Baltimore City	A1
Baltimore County	Aaa
Calvert	Aa2
Caroline	A3
Carroll	Aa2
Cecil	A1
Charles	Aa2
Dorchester	A2
Frederick	Aa2
Garrett	Aaa
Harford	Aa1
Howard	Aaa
Kent	A
Montgomery	Aaa
Prince George's	Aa3
Queen Anne's	A1
St. Mary's	Aa3
Somerset	-
Talbot	Aa3
Washington	A1
Wicomico	A2
Worcester	Aa3

¹⁹ Rated by Moody's